Aalto University
School of Science
Degree Programme in Information Networks

Tommi Saarikangas

Differences Between Observations and Interviews in Creating Use Cases for Usability Inspection

Master's Thesis

Espoo, March 30, 2016

Supervisor: Professor Tapio Takala

Thesis advisor: Karri-Pekka Laakso, M.Sc.

Aalto University
School of Science

Abstract of master's thesis

Author Tommi Saarikangas

Title of thesis Differences Between Observations and Interviews in Creating Use Cases for Usability Inspection

Master's programme Information Networks

Thesis supervisor Tapio Takala

Major Media

Department Computer Science

Thesis advisor Karri-Pekka Laakso

Date 30.3.2016 **Number of pages** 58 **Language** English

Abstract

Usability testing is a tool for validating that the designed user interfaces reach their goals. The testing can be done in many ways, either in cooperation with actual users, or by reviewing the designs by usability experts. Often the testing is based on user scenarios or use cases that present the reasons for using the user interface. The use cases can be made up, based on knowledge of the users, but often a better way is to research the actual users.

This study compares two methods, interview and observation, for gathering use cases to test the use of an insurance guidance web service. Instead of directly observing and interviewing the end users, the research was done in a phone customer service. First the phone calls between the customers and the claim handlers were observed. Then the claim handlers were also interviewed for additional use cases. The gathered use cases were then used to test the guidance web service with a simulative expert review method, where the use of the service was simulated, based on the gathered use cases.

It turned out that there were clear differences between the compared methods. The observations provided more detailed use cases, which lead to finding more severe problems from the service, compared to the interviews. On the other hand the interviews enabled to target the research to areas that were hard to cover with the observations. The use cases from the interviews also provided more findings related to structuring the content and the layout of the service. This research suggests that using a combination of both observations and interviews has many benefits, as the methods complement each other well.

Keywords interview, observation, usability evaluation methods, UEM, comparison, expert review, use case, usability inspection

Aalto-yliopisto
Perustieteiden
korkeakoulu

Diplomityön tiivistelmä

Tekijä Tommi Saarikangas

Työn nimi Haastatteluiden ja havainnointien väliset erot käyttötapausten keräämisessä käytettävyystarkastelua varten

Koulutusohjelma Informaatioverkostot

Valvoja Tapio Takala

Pääaine Media

Työn ohjaaja Karri-Pekka Laakso

Päivämäärä 30.3.2016 **Sivumäärä** 58 **Kieli** Englanti

Tiivistelmä

Käytettävyystestauksella voidaan validoida suunnitellun käyttöliittymän tavoitteiden täyttyminen. Testejä voi tehdä monella eri tavalla, joko yhteistyössä käyttäjien kanssa, tai asiantuntija-arvioina. Usein testaus perustuu käyttötapauksiin, jotka tiivistävät käyttöliittymän käytön tavoitteet. Suunnittelijat voivat keksiä käyttötapaukset itse, jos heillä on riittävästi tietoa käyttöliittymän käytöstä. Usein on kuitenkin parempi kerätä käyttötapaukset tutkimalla oikeita käyttäjiä.

Tässä työssä vertaillaan haastattelua ja havainnointia käyttötapausten keräämismenetelminä. Haastattelut ja havainnoinnit tehtiin erään vakuutusyhtiön puhelinpalvelussa kuunnellen puheluita sekä haastatellen korvauskäsittelijöitä. Kerätyillä käyttötapauksilla testattiin vakuutusyhtiön ohjesivuston käytettävyyttä käyttäen simuloivaa asiantuntija-arviointimenetelmää.

Haastatteluiden ja havainnointien välillä havaittiin selkeitä eroja. Havainnoinnit tuottivat yksityiskohtaisempia käyttötapauksia, joiden avulla löydettiin vakavampia käytettävyysongelmia. Toisaalta haastattelut mahdollistivat tutkimuksen kohdentamisen niihin alueisiin, joista oli vaikea saada käyttötapauksia havainnointien avulla. Haastatteluista kerätyt käyttötapaukset tuottivat enemmän sivuston sisällön jäsentämiseen liittyviä huomioita. Tutkimuksen perusteella haastatteluiden ja havainnointien yhdistäminen on järkevää, sillä ne täydensivät toisiaan hyvin.

Avainsanat haastettelu, havainnointi, käytettävyys, käytettävyyden arviointimenetelmät, UEM, vertailu, asiantuntija-arvio, käyttötapaus, käytettävyystarkastelu

ACKNOWLEDGEMENTS

Karri-Pekka Laakso,
Tapio Takala,
Marjo Korhonen,
Susanna Reunanen,
Research Participants,
Colleagues,
Friends,
Family.

Thank you all.

Helsinki, March 30, 2016

Tommi Saarikangas

Table of Contents

1 Introduction

This chapter describes the background and motivation behind this thesis. It also presents the objectives, research questions, scope and the structure of the work.

1.1 Motivation

Creating a good user interface for a product or service demands a wide set of skills from the people participating in the project. Often there are different experts working on the graphics, the interactions, the business side of the design and the implementation. In many cases testing the user interface against usability issues is also done by a separate set of experts. Dividing the design work to different experts might create silos, which makes it more difficult to design a coherent product or service. Therefore professionals with a versatile set of skills are often highly appreciated. When the designers have a good understanding about business models and can also take part in both the design and the implementation, it is a huge benefit for the project. On the other hand, if the same people work on all the different aspects of the project, there is a need for making sure that the work methods are effective to guarantee that the experts can actually concentrate on their work.

For example, when testing a user interface, big scale usability tests often take a lot of time and resources, and might measure things that are not important for developing the user interface. These big summative tests have their place at the end of the development process, but much too often they are the only testing methods that are being used. That is why it is crucially important for the designers to have a comprehensive understanding of how different usability evaluation methods are best used during a development process. There are many variables that should be taken into consideration such as the phase of the project, the type of the project, access to end users, and budget. Often the best practice is to

combine multiple different methods to gain a comprehensive understanding of the users' needs.

The challenge for the designers comes from understanding which method to apply and when. This study aims to help with the issue by gathering use cases for a usability inspection method using both interviews and observations, and then comparing the results. The goal is to gain insight on the different methods for gathering use cases and their use in a software development project. The focus is on finding concrete differences to help designers choose between the methods.

1.2 Background and Research Questions

There has been a lot of research about different user interface evaluation methods, but most of them concentrate on comparing the methods used for actually evaluating the user interface instead of comparing the methods for gathering use cases to be used with the usability evaluation methods. This research aims to provide practical knowledge of the differences between observations and interviews, when using them to gather use cases for a usability inspection. In practice, the research part of this thesis was done in cooperation with a software development project, developing a guidance web service for a Finnish insurance company. The web service consists of simple article pages that give step-by-step instructions to different accident situations. The observations and interviews were conducted with the insurance company's phone service personnel, who receive phone calls from customers. The aim was to find answers to the following research questions:

1. What are the main differences between the use cases provided by interviews versus observations?

Understanding the differences between the use cases provided by different methods helps to choose the right method for each situation. Sometimes more detailed use cases are needed, while in other situations it might sufficient to have a larger amount of more abstract use cases. This research question also tries to compare observations and interviews in different aspects, such as how well they

were able to provide use cases form the targeted scope, and how effectively they produced wanted results.

2. What are the main differences in results, when applying usability inspection methods to test a user interface with use cases obtained from interviews versus observations?

The findings from the usability inspection reveal a great amount of the nature of the gathered use cases, such as how severe the found problems were, or what type of problems they revealed from the service.

3. How to choose between observations and interviews as a method for gathering use cases?

By conducting research with two different methods, a variety of information is revealed in addition to plain statistical differences. This question tries to summarize the results in a way that benefits the designers who are struggling to find concrete information of what methods to use in their research.

1.3 Scope and Structure

This thesis includes a literature review of the existing literature on usability evaluation methods (UEM), their comparison and an empirical case study conducted as part of a development project in a Finnish insurance company. The main emphasis is on the empirical part, and the literature review mainly provides information about the problems of the existing literature on UEM comparison. The literature also aims at giving background information about the methods that are used in this research, and supports explaining the used methods in more detail.

Chapter 2 presents the background and previous research in a top-down model, by describing first why different UEMs are used, and then goes into more detail about the methods that are used in this research. Chapter 3 gives a detailed overview of how the empirical research was done, and chapter 4 presents the

results. Chapters 5 and 6 conclude the thesis by reflecting how the findings give answers to the research questions, and by discussing the restrictions of the research.

2 Background and Previous Research

Section 2.1 gives an overview of what usability evaluation methods (UEM) are and what kind literature can be found comparing the methods. Section 2.2 gives an overview of different usability inspection methods and finally section 2.3 describes good quality use cases and methods for producing them.

2.1 Usability Evaluation Methods

When producing software, one crucial criterion for the success of the end product is usability (Matera et al. 2002). There are many definitions for usability, but one of the most comprehensive and understandable comes from the ISO/IEC 25010 standard (cited in Valentim, Conte, and Maldonado (2015)), where usability is defined as: "the capability of the software product to be understood, learned, operated, attractive to the user, and compliant to standards/guidelines, when used under specific conditions". Every software product is different and answers to different needs, which means that designers need to be able to apply a versatile set of usability evaluation methods (UEM) in the design process to verify that the designs actually answer the right needs. As Følstad, Law, and Hornbaek (2010) says: "Usability evaluation has become indispensable for HCI practice and research".

UEMs can be divided into two broad categories (T. Conte et al. 2007; Bias, Moon, and Hoffman 2015): Usability Inspections, which are based on experts' analysis of the software and do not involve users' participation, and evaluation methods involving users' participation. Gray and Salzman (1998) describe these two categories as analytic and empirical, underlining the difference between inspection methods as analytical research, and usability testing as empirical work. Usability Inspection methods include, for example, Heuristic evaluation, Cognitive walkthrough, and checking against standards or guidelines (Nielsen 1994). Empirical methods include different kinds of usability tests and walkthroughs

with the users. N. E. Jacobsen (1999) also recognises a third category, inquiry methods, consisting of interviews, observations and focus groups, aiming at obtaining information from the users to better understand the used system. Table 2.1 presents Jacobsen's categorization of UEMs.

Method category	Name of the method
Empirical methods	Usability test
	User performance test
	Remote usability test
	Beta test
	Forum test
	Cooperative evaluation
	Coaching method
Inspection method	Expert review
	Heuristic evaluation
	Cognitive walkthrough
	Pluralistic walkthrough
	Structured heuristic evaluation
	Perspective-based inspection
Inquiry methods	User satisfaction questionnaire
	Field observation
	Focus group
	Interviews

Table 2.1: Usability evaluation methods, categorized by N. E. Jacobsen (1999)

Table 2.1 describes only a few methods compared to the large and increasing amount of different UEMs and their variations. As new methods are being introduced, the general lack of understanding of the capabilities and limitations of each method raises interest in determining which methods are effective and in which situations (Hartson, Andre, and Williges 2001). The decision between the methods does not always depend on what the best method overall, but more often what is the most effective method in a particular situation.

Using UEMs does not always guarantee good usability. For example, using certain UEMs only to gain summative reports of the software can lead to wasting resources in something that does not drive the design process forward. The designers need to be able to choose evaluation methodology based on the actual problems or research questions under consideration to achieve proper results. (Greenberg and Buxton 2008)

2.1.1 Comparing usability evaluation methods

During the past two decades there have been multiple studies that provide comparison between different UEMs. The problem is that there have not been standard assessment criteria for comparing the methods (Chattratichart and Brodie 2004). Thus comprehensive comparison on which is the most effective method in which situation has been hard to produce. There are various different measures for comparing the UEMs, which makes it generally difficult to make solid conclusions about a particular method (Andre, Williges, and Hartson 1999). To better compare UEMs, metrics for assessing thoroughness, validity and effectiveness have been proposed (Hartson, Andre, and Williges 2001):

$$Thoroughness = \frac{Number\ of\ real\ problems\ identified}{Number\ of\ real\ problems\ that\ exist}$$

$$Validity = \frac{Number\ of\ real\ problems\ identified}{Number\ of\ problems\ identified}$$

$$Effectiveness = Thoroughness * Validity$$

Even though these metrics give a good structure for comparing different methods, there still remain problems, such as subjectivity and the effect of who is the one conducting the usability evaluation research. Hertzum and Jacobsen (2001) did a research about the so-called evaluator effect, which means the differences in results, when different people use the same UEMs. By reviewing 11 studies Hertzum and Jacobsen (2001) concluded "The average agreement between any 2 evaluators who have evaluated the same system using the same UEM ranges from 5% to 65%". Filippi and Barattin (2012) also mention subjectivity as a major problem in usability research, and provide belief maps as a tool to weight the judgement of individual usability experts. Belief maps aim at filtering the judgments of the usability experts or practitioners who apply UEMs, in order to lessen the negative aspects of their subjective reasoning. Often the UEMs have at

least a small learning curve, which might create bias in the research. Experienced evaluators might be talented in conducting certain type of usability evaluation research, but might be unwilling to try new methods that fall outside of their comfort zone.

To further reduce the problem of subjective reasoning with UEMs, researchers have tried to create methods and tools that help to minimize the difference in results between beginner and expert evaluators. Hornbaek and Frokjaer (2004) conducted a research, where all the participants were novice evaluators, emphasizing how well novices benefit from using the methods in the research. Creating methods that provide consistently good results even when used by novice evaluators are especially useful in small teams where each member might participate in the evaluations. Filippi and Barattin (2012) propose a new method of creating so-called multimethods, intended as "assemblies of single methods that complement each other in performing an evaluation as complete as possible." These multimethods help non-expert evaluators to find the best combination of UEMs for the specific situations.

As there are many difficulties in producing comprehensive comparison between all the UEMs, many studies concentrate on comparing only different variations of the same UEMs or comparing the UEMs in certain situations. For example, Somervell and McCrickard (2004) compare the differences between different heuristic sets, while Bowman, Gabbard, and Hix (2002) study how the traditional UEMs work in virtual reality systems. Furthermore, there has been an increasing amount of research on testing mobile devices, as they have created new challenges in utilizing UEMs (Duh, Tan, and Chen 2006).

To further complicate the assessment of different UEMs, the criteria used to compare the methods should be expanded to also include the time needed to implement the methods and cost of using the methods. The UEM to provide the best results in terms of found usability problems may also be the most expensive, making it undesirable for many situations. Filippi and Barattin (2012) use radar charts to visualize the differences between UEMs, as shown in figure 2.1. Radar

charts give a good overview of the different methods and they help with choosing the most suitable methods for the situation.

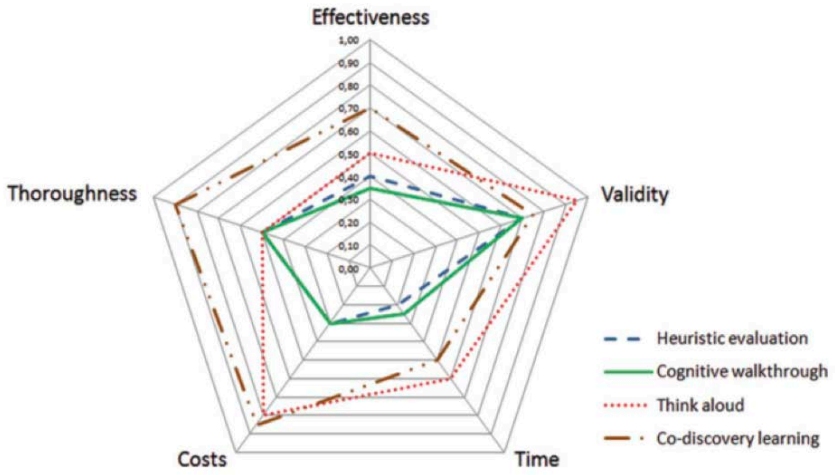

Figure 2.1. Radar chart used to compare UEMs (Filippi and Barattin 2012)

In conclusion, there has been plenty of research trying to compare UEMs, but generally it is still extremely difficult to generalize results between the studies. Choosing the best UEM for a specific situation depends on several factors, including "where you are in the product life cycle, the level of detail you need at this moment, how much time and other resources you have, and how much you can get involved with the users and their work" (Hackos and Redish 1998). Thus it seems to be fruitless to try to create a general set of rules for choosing the optimal UEM. Instead, this research was targeted at a specific situation, which means that the results apply best as guidance to help with similar situations in the future. The compared methods are observation and interview, which are used to produce use cases for a simulative usability inspection.

2.2 Simulative Usability inspection

Usability inspection methods are an affordable alternative to usability testing. They consist of individual and group inspections, where expert evaluators inspect the user interface, without the need for test users (Nielsen 1994). Usability testing often requires a large amount of resources, and at least partial implementation of

the application, which means that it is often used later in the development process (Hornbæk et al. 2007). Conducting usability evaluation when there has already been a larger amount of code written, increases the cost of correcting usability problems (G. Travassos et al. 1999). Inspection methods are gaining popularity, as they can be easily used in early phases of the development process, without the need for a separate space, or equipment, such as recording software (Fernandez, Insfran, and Abrahão 2011; Rivero, Kawakami, and Conte 2014).

Usability inspection methods help to conduct small tests early in the development process (Power and Fox 2014). Silva da Silva, Selbach Silveira, and Maurer (2015) note that "it is extremely difficult to perform traditional user testing sessions due to the tight schedules inherent to Agile." Indeed, especially in agile projects, large scale usability testing might not be a vital option to increase the usability of the application. Combining user-centered design with agile development has been a repeating theme in the literature during the last decade. Many studies present models, such as *one sprint ahead*, *little design upfront* and *low-fi prototypes* to integrate user-centered design better to agile development (Saarikangas 2012). Most of the processes presented in these studies propose designing little-by-little in cooperation with the agile processes, such as sprints. Even though this type processes are commonly in use, they are not always the best in fast and iterative projects. Sometimes more design upfront can help set the requirements for the implementation better.

In this thesis the usability inspection method is based on working with the GUIDe process model, which emphasized users' goals and designing the user interface before starting the implementation. By working close to the actual end users, and determining their goals for the use of the new product or service, the designs can be iterated to apply to the users' actual needs. By investigating the users' situation it is possible to create goal-oriented use cases that help iterate the designs. GUIDe's goal of doing a big part of the design up front, before the implementation starts makes it easy and cheap to make changes to the design. (S. A. Laakso and Laakso 2004)

In practice, when conducting a simulative usability inspection, the researcher goes through the scenarios provided by the use cases one by one. He tries to select an optimal path towards the resolution, so that in every decision point he makes the decisions based on the goals the use cases provide. He then writes down all the findings that came up during the simulation. This procedure is often repeated more than one.

2.3 Goal-Based Use Cases

Whether designing a new service or evaluating the usability of an existing one, the main focus should be on the users. There are many ways of approaching the process of involving users in the design or evaluation process, but all of them should have the goal of finding out what the users need to achieve. Naturally there are a multitude of other factors to consider in the design process, such as the business needs, but considering usability, it is crucially important to know the users. However, getting the right type of information is not an automatic process. The users do not always know what would be best for them, as they are not experts in designing software. Thus questions, such as "What would you like to see in this interface?" often produce bad results. Instead it is important for the usability experts to get to know the situations and goals of the users. Use cases are a good tool for communicating the actual situation to which the design should be based on (Niès and Pelayo 2010).

A common problem is that the use cases are not based on proper research, or the research is not done in a way that supports the goals and motivations of the users. In other words, there is a lot of misunderstanding of how use cases should be produced and formed to support the design process as well as possible. There are situations where it is appropriate to form the use cases based on common knowledge of how the software is used, especially when launching new software that does not yet have any users. However, most of the time there should be research to back up the facts of how the users interact with the software.

There are many different methods to use for gathering the use cases, from which interviews and observations are among the most popular ones. Interviews alone provide a huge amount of variations on the ways in which they can be done. The basic interview formats are structured, semi-structured and unstructured interviews, depending on how strictly the interviews follow a predefined set of questions (Wilson 2014). These formats describe the overall level of open conversation during the interviews. In addition, another variable is the context of the interviews. There is a big difference in conducting an interview in a meeting room versus the actual work desk, or having only one versus multiple interviewees in the same session. Interviews can also be used together with other methods. For example, contextual inquiry uses observations together with interviews to gain insight into the actual work of the users (Schuler and Namioka 1993). Observations alone or combined with interviews allow the researcher to actually be there, when the users interact with a product or a service. Observations can be participatory, where the observer takes part in the activities, or non-participatory, where the observation are done either from a distance or otherwise so that there is no effect on the actual user.

Regardless of where the use cases originate from, it is important to present the use cases in a way that supports the test situation as well as possible. Nielsen Norman Group (2014) concludes writing good use cases in three action points: 1) Make the task realistic. 2) Make the task actionable. 3) Avoid clues and describing the steps. Just by making the use cases realistic, they can provide much more findings when testing the interface with UEMs (Velinen 2015). When producing goal-based use cases, the designers should look for goals that are "sufficiently (but not too much) above the system" (S. A. Laakso and Laakso 2004). This goes hand-in-hand with Nielsen Norman Group's third action point of avoiding describing the steps. The use cases should not be descriptions of which steps the user should take in order to achieve the goals, but instead describe what the original goals for the interaction are.

3 Research

The goal for this research was to study differences between observations and interviews as methods for gathering use cases for usability inspection. The research was conducted in two parts. In the first part use cases were gathered from observations and interviews, which were done in the insurance company's phone service. The use cases were then documented and used, in the second part of the research, for a simulative usability inspection. The goal is to use quantitative and qualitative methods to analyse how the methods differ from each other. Also the findings from the usability inspection are analysed to give insight into what were the differences between the use cases gathered with the different methods.

Section 3.1 introduces the tested service in more detail. Section 3.2 describes the first part of the research, the interviews and observations. Finally section 3.3 presents how the simulative usability inspection was done.

3.1 The Tested Service

The research was conducted in a project creating a guidance service for a Finnish insurance company. At the time of the research the service had been public almost for a year, and the development of the service was still continuing. The results from this research were not meant to be a summative report of the overall usability of the service, but to provide more knowledge of the users and use cases of the service, and to find usability problems.

The goal of the service is to provide help in an accident so that the users can normalize their situation. For example, if the user's phone breaks, there is information about where to get it fixed and how much can be compensated from the insurance. The service also guides the users where to file an accident claim online.

The service consists of a front page and multiple article pages, divided into different categories. The front page has a search and links to all the article pages. The article pages consist mostly of text, tables and links. The articles are named after accident, for example, "My phone's screen broke" or "I hurt myself in a traffic accident". Overall there are 101 articles divided into 20 different categories such as "Travel" or "Camera", based on the most common accident types.

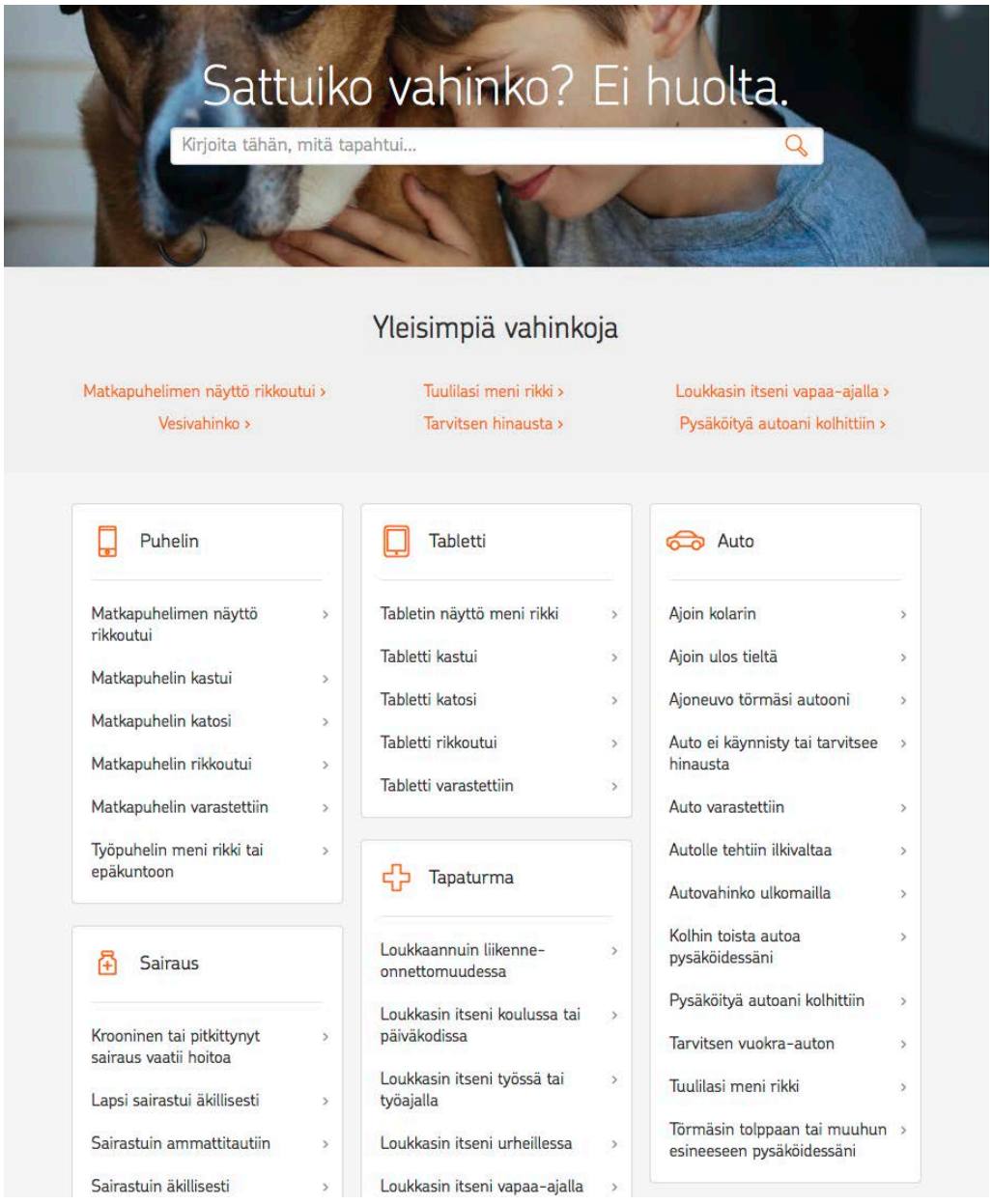

Figure 3.1 Example of the front page of the service

Figure 3.2 Example of an article page from the service

The development team had conducted research and testing to help improve the usability of the service already before this research. There had been interviews with claim handler experts and with users who had recently had some kind of accident. There had also been light usability testing, mainly in the form of walkthroughs.

3.2 Planning the research

When planning this research, the tested service had been developed for almost a year and it was already publicly available. A big part of the content was originally based on interviewing claim handlers from inside the company. The emphasis in the first revisions of the service was to cover the most common accident cases. After the initial scope was fulfilled, usability evaluation was done for some of the most read articles of the service. The usability evaluations were interviews and walkthroughs with customers, who had had accidents in the near past. This research was made to validate a larger number of the use cases in addition to only the most common ones. So far there had been only a few detailed use cases documented, so there was a need to gather a larger amount of use cases to be used to evaluate the service.

Conducting research with actual customers, in this case, was quite expensive, which is why this research was made in cooperation with the phone service of the company. The tested web service supports similar use cases compared to the phone service, such as filing accident claims and finding information about how to get compensation after an accident. Thus it was justified to conduct the research by observing phone calls and by interviewing the claim handlers.

To prepare for the observations I interviewed a colleague, who had done similar observations in a previous phase of the project (Simell 2015). I also read through the material from his last observation session. Thus I knew beforehand what type of results I could expect. To prepare for the interviews I talked with another colleague, who was an experienced interviewer, to get tips on how to get proper use cases from the interview sessions (Viljakainen 2015).

Based on the discussions with colleagues and previous experience of conducting observations and interviews, I decided that there was no need to plan strict structures to any of the sessions. Instead it was reasonable to think through what type of data I wanted to get out of the sessions and to create a loose plan based on that. In both, the observations and interviews, I decided to write notes with my laptop, while communicating with the participants. It is a method I have

practiced a lot, and I felt comfortable recording all the necessary notes myself, while conducting the sessions.

For the observations I decided that the most important thing was to record the heard cases as well as possible, and to ask clarifications between the phone calls. For the interviews I set up a goal of recording as many and as detailed use cases from the categories that were left mostly without any use cases from the observations.

3.3 Part 1: Observations and Interviews

The goal of the tested service is to provide clear instructions in accident situations. There is a great amount of phone calls made to the phone service consisting of simple questions about how the insurances work and how to file an accident claim. This type of information should be made available to the customers in an easy-to-read format for them to understand their insurance cover better. To gather realistic use cases, observations and interviews were conducted in a phone customer service. By investigating reasons and motives for the customers to call the phone service it was possible to test how well the service provided the right kind of information.

The research had a tight budget, and the focus was on producing useful information for the project. Thus the sessions were planned with a practical viewpoint, trying not to affect the work of the claim handlers too much, and to keep all the sessions during a certain time frame. For this reason the observation and interview sessions were not strictly defined to last equally long, but to follow the claim handlers' schedule.

3.3.1 Observations

There were four different observation sessions with four different participants. One participant was an expert in travel related accidents and illnesses, two in other free time accidents and illnesses, and one an expert in home damage, animal

damage and damaged items, such as phones and household appliances. All four observation participants had many years of work experience.

The telephone customer service space was an open office with approximately 10 claim handlers working there. The desks had small walls to provide better acoustics and to reduce the amount of noise. The claim handlers had a two-screen setup and a headset for communicating with the customer. They also had a notebook to write down information. One of the claim handlers also used a logbook to write a summary of every case she had, if she needed to remind herself of previous cases.

When the customers call the service number, they go through a selection dialogue guiding them to the right department. For example, "If you need assistance with travel related accidents, press 2". This selection dialogue enables the customers to use only one phone number for all their insurance related needs, and they are then directed to the right channel. There are multiple channels that relate to a certain type of insurance such as travel or home insurance. A claim handler working in the phone service is usually specialized in one or more different types of insurances, and for this reason answers to calls from a specific channel.

The claim handlers are also able to see incoming calls from multiple different channels and can also answer to calls from different channels. This is useful especially in situations where there is not necessarily enough phone calls from a particular channel. In these cases the claim handlers can answer to calls also from a channel, which is not among their core knowledge, as they in any case are usually able to handle the situations quite well. If the claim handlers' expertise is not enough to give straight answers to the customer, they always have someone else to ask help from.

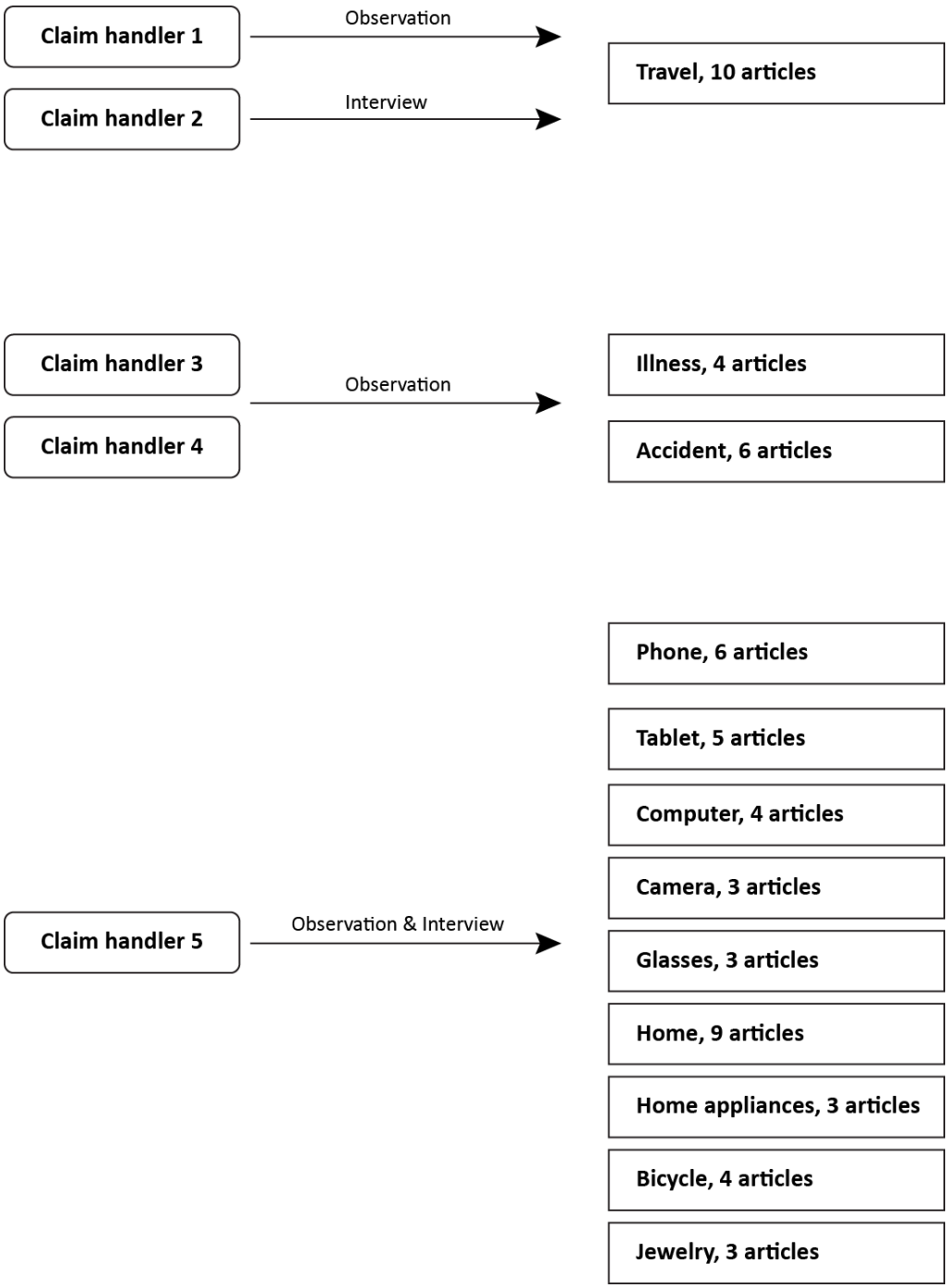

Figure 3.3 Targeting of the interviews and observations

I observed four different sessions: one 45 minute session with a travel accident expert, two 45 minute sessions with accident and illness experts and a two hour session with a damaged items, home, and animal expert. The idea was to cover a wide spectrum of accident types to provide as much useful information as possible for testing the service. The areas of interest were also chosen so that they

cover cases from accident types we had not researched that much before during project. Figure 4.3 presents the targeting of the sessions for both, the observations and the interviews.

The personnel provided me with headphones so that I could listen to the phone calls in real time while taking notes. Each session included a short introduction, after which the main focus was on listening to the incoming phone calls. Between the phone calls there were short breaks, when I could ask questions and clarifications. Often the time for those breaks was determined by the time the claim handler took to finish handling the case from the previous phone call. This would mean, for example, to send a relevant email or to file an accident claim based on the caller's situation. Most of the time it took only a few minutes to finish up with the previous case and to take in the next call. A few of the breaks were a bit longer, maximum of 13 minutes, due to receiving no calls for any of the followed channels at that time.

During the observations I took notes with my laptop, basically writing down the entire dialogue between the customers and the claim handler. Between the phone calls I went through the notes, cleaned them up, and made sure that I had understood everything correctly. During the observations approximately 4000 words were written down as notes.

3.3.2 Interviews

There were two participants in the interviews: an item damage specialist, who also participated in one of the observations, and a travel accident specialist. The interviews were done in a meeting room, a week after the observations, and were also planned after already conducting the observations to better target areas from the research that the observations could not cover.

The interviews were semi-structured interviews, enabling free conversation, if there were important topics that were not originally planned. The aim was to gather use cases from the areas that were left uncovered in the observations, but also to target to the cases that were especially difficult for the customers. The first interview concentrated more on covering different cases from the large amount of

item-related articles. The second interview's focus was more on the difficult travel related articles.

There were a large amount of cases that belonged to the item category, ranging from phones and tablets to bicycles and jewellery. Thus it was difficult to get a wide range of relevant use cases from the observations, especially as phone accidents were an extremely common accident type. The first interview lasted for an hour.

The second interview was about travel related accidents. This was chosen as the topic, because even when there was a chance to observe especially travel related phone calls, only one of the calls was actually about traveling. Thus it was important to gather more information on travel accidents. This interview was held at a bit more abstract level, concentrating on problematic areas, including common misunderstandings by the customers. This was not originally planned, but the interviewee had a keen interest of telling about problematic areas concerning travel related accidents. He also had a good overall knowledge of what kind of things the customers usually misinterpret, which is why it was best to allow more free conversation and try to get detailed use cases covering the problematic areas. The second interview lasted for 45 minutes.

3.3.3 Creating goal-based use cases

The notes from the observations and interviews were read through and cleaned up. First the gathered use cases were summarized based on the notes, trying not to leave any details out. Then they were numbered and categorized to help with the analysis. Finally the use cases were written in a format which supported usability inspection the best: First there is a short description, which provides enough information to identify the goals of the user, followed by status information. The status information gives additional details that support the case, such as time, location, misunderstandings, and relevant insurance information. This format of the use case descriptions is commonly used with GUIDe (S. A. Laakso and Laakso 2004). Figure 3.4 presents an example use case, created for user interface design of a university library, by S. A. Laakso and Laakso (2004).

Goal of the researcher: Hannu Toivonen knows that in Card's book on *Information Visualization*, there are good examples of glyphs for his lecture of Research databases course.

Status data:

Times and dates

- Today it is Monday 1st September, 9.30 am.
- The lecture will be on Tuesday 9th Semptember, 10-12 am.

The book to be needed

- Hannu has skimmed the book before, but he does not have the book in his room.
- Hannu remembers that the book is called 'Information Visualization' or something like that, and one of the authors is Card.
- Full reference data: Card Stuart, MacKinlay Jock, Shneiderman Ben, Readings in Information Visualization: Using Vision to Think.

Availability of the book

- In the local library, 3 pieces, all borrowed.
- In the library of Faculty of Medicine, there are 3 pieces: 2 borrowed, 1 available. Hannu has not visited the library before and does not know the location of it.
- In the library of Faculty of Behavioural Sciences and the library of Psychology, there are 2 pieces, all of them borrowed.

Figure 3.4 Example of a goal-based use case (S. A. Laakso and Laakso 2004)

When using goal-based use cases, there is often not a need for a large amount of use cases for a certain function or feature in the software (S. A. Laakso and Laakso 2004). Even though the service tested in this research is quite simple and only has a few actual features, it requires a larger amount of use cases to cover all the diverse content. Regardless that most of the accidents converge to a simple flow of first finding out what the insurance covers and then filing an accident claim, the different accident cases and the insurances are so complicated that they can not be tested with only a few cases. Often the usability tests concentrate on testing learnability and efficiency problems, but in this research the content of the service forms a big part of the usability, and thus needs to be focused in the testing.

3.4 Part 2: Usability Inspection

The usability of the service was evaluated using goal-based walkthroughs. They are expert reviews, conducted without any real users. In a goal-based walkthrough the expert simulates every step the user must accomplish with the service in the context of each gathered use case. All the walkthroughs were started from the front page of the tested service, i.e. the focus was on the user interface and the

content, and not discoverability. Each step was made thinking about the user's goals, and every finding was written down. The idea of the walkthroughs was to simulate the same situation with the user interface, as the customers had with the claim handler. The findings ranged from noticing unclear information to realizing that the particular use case could not have been solved without the help of an expert.

Usability inspections are normally done only by a selected number of experts, which was also the case in this research, as I was the expert conducting the research. By playing the role of the user, I went through the scenarios, trying to find an optimal work flow, which would give answers to all of the questions the user had or might have. The findings were then categorized, based on their severity and type. The analysis of the findings is presented in chapter 4.

4 Results

This chapter presents the main findings of the research: the use cases and the expert review results. First the structure and aim of the gathered use cases are presented in section 4.1. Section 4.2 analyses the use cases in different ways with both quantitative and qualitative methods. The results from the second part of the research, the expert review, are reviewed in section 4.3. Finally all the results are summarized in section 4.4, in addition to giving guidelines for choosing the best methods for gathering use cases.

4.1 Gathered Use Cases

The aim of the first part of the research was to gather and document use cases for the usability inspection via observations and interviews. The documented use cases generally equal one phone call or one situation. The reason for the phone call was not always relevant for the usability inspection, as there were calls where the customer asked about delayed payments or wanted to talk with another claim handler. However, all the different situations were documented as use cases to give an overall view of how effectively the research methods were able to produce relevant data. Basically all the use cases answered the question: "Why does the customer call the insurance help number?"

The use cases were documented by describing the actual situation of the users instead of documenting the system operations that happened during the phone calls. The system operations were mainly related to the user interface the claim handlers were using, and thus it was not in the scope of this research.

The cases were documented with the following details:

- Case number (a running number for the cases)
- The used method (observation or interview)

- Relevant article (to which guidance article this case refers to)
- Category (categorization in section 4.2.1)
- Situation (description of the accident)
- Additional information (not directly relevant to the case, but useful information nevertheless)
- Result (how did the process continue after the situation description)

Here is an example use case:

Case 6, Observation, Free time accident (Loukkaannuin vapaa-ajalla), information

Situation: Customer fell down accidently and hurt her shoulder. She went to the hospital and still needs to go to an x-ray on Friday.

Information:

- It is Wednesday today.
- No expenses are paid yet, as the hospital has not sent a bill yet.
- The x-ray is further away, so she will need a taxi.
- She wonders how do the compensations from the insurance company relate to Kela compensations, or if she might get allowance (päiväraha).
- She has Vapaa-ajan tapaturmavakuutus and Yrittäjän tapaturmavakuutus.
- She is not an entrepreneur anymore.

Result: All expenses except allowance are compensated from her insurance. The customer is guided to file an accident claim online. A phone time is reserved to cancel her Yrittäjän tapaturmavakuutus.

All the documented use cases can be found from Appendix A.

4.2 Quantitative Analysis

In this section the use cases are analysed by creating statistics of their different aspects. The aim is to present what kind of use cases where gathered, how efficient the methods were, and how well the targeted scope was covered. First the use cases are divided into categories, which helps to identify the reasons why the customers needed to call the phone service. Secondly the efficiency of the methods is reviewed by evaluating the average time used to record a single use case. Finally the used methods are analysed based on how well they were able to target the use cases from different articles and categories in the service.

4.2.1 Categorization of the use cases

Overall 33 use cases were recorded during the research. The cases were divided into 5 different categories depending on the core reason of the phone call; Accident claim, Information, Delayed claim handling, Power of attorney and Meta category (call redirection). Some of the use cases were categorized to multiple categories, as all the cases were not simple enough to fit into only one category. The categories are reviewed in more detail in the following paragraphs.

Accident claim

There were 12 use cases in this category: 6 from the observations and 6 from the interviews. In these use cases an accident claim was made during the phone call. The reason for three of the cases was that the customer was not able to file the claim online. In the rest of the cases the customer had not tried to file a claim beforehand, but contacted the phone service first. Below is an example situation from a use case in the Accident claim category:

Customer's son had been ill, and thus twice to the hospital. The customer could not file the accident claim online, so he wants to do it via phone. There were expenses from the doctor visits, lab and medicine.

Information

There were 19 use cases in this category: 14 from the observations and 5 from the interviews. The main reason for the customer to contact the insurance company in these cases was to ask for information about something related to their insurance or the claim handling process. Below is an example situation from a use case in the Information category:

The customer had a sports related accident a month ago and hurt his knee. There were some doctor visits and an MRI included. They only found minor tears in the knee. Now a month later the knee is still hurting. The customer's company doctor could give an admission note to a physiotherapist, so he wants to know if the insurance covers it.

Delayed claim handling

There were 5 use cases in this category: all of them from the observations. At the time of the research there were some delays in the claim handling process, which is why the customers were asking when their payment arrives. This was exceptional and would not happen in such large amounts in a normal situation. Below is an example situation from a use case in this category:

The customer had been to a doctor at Terveystalo on Monday (today it's Wednesday). The customer's wife had filed an accident claim online, but they had not heard anything afterwards. When is the compensation paid?

Power of attorney

There was one use case in this category, from the observations. The call was about the caller needing a power of attorney, meaning that he was not the policyholder of the insurance, and thus needed a permission from the policyholder to decide on events regarding the insurance claim. Below is the situation from the use case where a power of attorney was needed:

The customer needed to cancel a trip due to a sudden illness. His wife had filed the accident claim. He wants to receive the payment to his own bank account, but received an email that he needs a power of attorney for this, as it was his wife who filed the claim.

Meta category (call redirection)

This category also has only one case, where the customer was trying to reach a claim handler she was talking with a few minutes earlier. This case could have been in any of the previous categories, but was left uncategorized, as there was not enough information about the content. This particular situation happened, because the customer can only call the common service number and not the individual claim handlers. Here is the example situation:

The customer had called 5 minutes ago, and talked with another claim handler.

The categorization helps to identify how well the use cases can be utilized in the usability inspection and in the design of the service. In short, the first two categories, Accident claim and Information, are the most beneficial for the project. Those categories include the types of use cases the service tries to provide help with by providing a clear path to filing an accident claim and providing guidance in accidents.

Even though the two first categories are the most beneficial, the next two categories, Delayed claim handling and Power of attorney, also provide crucial information about the problematic situations the customers face when having accidents or other situations where they need to utilize their insurances. The web service tries to provide a good starting point for all types of accidents, which means that there should also be enough information to guide the users to the other services the company provides, when they need to know about delays in the service or using a power of attorney. In that sense all the results can be utilized in the development of the service, even though the most beneficial information comes from the use cases that are most directly relevant to testing the user interface and content of the service.

The results of the categorization are shown in the figure below. The figure presents the amount of use cases per hour in each category, divided between observations and interviews.

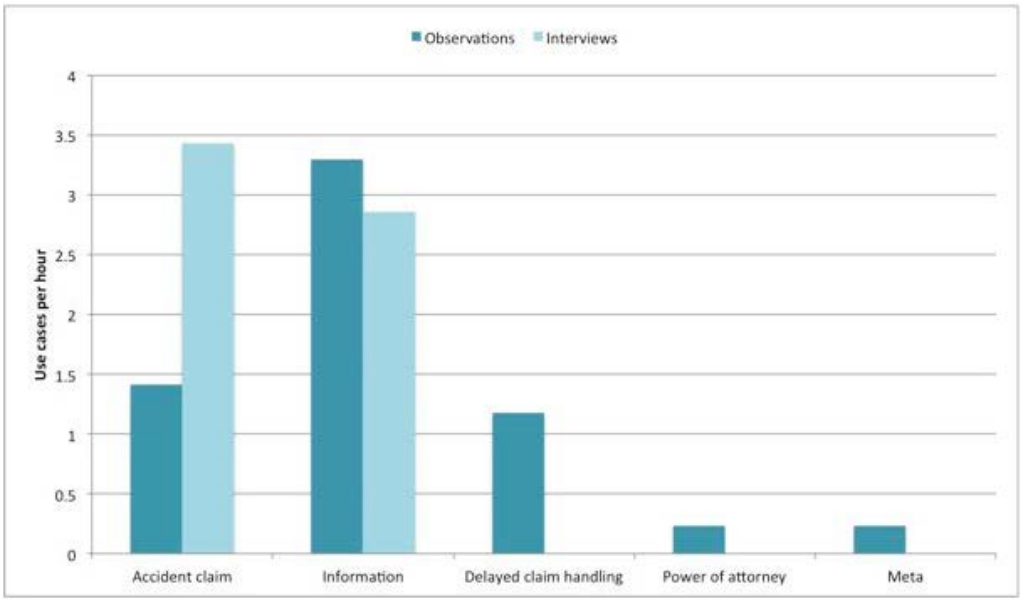

Figure 4.1 Use cases per hour divided by category

The figure above presents the distribution between the categories. In relation to the time used for the research, the interviews produced a greater amount of use cases in the Accident claim category, and almost the same amount of use cases in the Information category compared to the observations. Furthermore, unlike the observations, the interviews did not produce any use cases to the Delayed claim handling, Power of attorney or Call redirection categories.

The results were quite predictable based on the nature of the methods. The observations produced some cases to the categories that were outside the research scope, as it was harder to focus the observations to only consist of certain use cases. The interviews concentrated on cases where there was a clear pattern of the customer first having an accident, then asking for some information, and finally filing an accident claim. Thus the interviews were more effective in producing only relevant use cases. Both methods provided a good amount of use cases to the Information category, which means that the chosen research methods did a good job in gathering meaningful data.

4.2.2 Efficiency

This section describes the efficiency of the research methods. Here efficiency is determined by the time in minutes used to record a single use case.

Overall 33 use cases were documented during the research. 23 of the use cases were recorded from the observations and 10 from the interviews. All the observations together took 255 minutes and the interviews 105 minutes. Thus it took approximately 11 minutes to record one use case from the observations and 10,5 minutes from the interviews, regardless of the category of the use cases. However, it is reasonable to take into account the type of the use cases instead of only looking at the numbers.

The aim of the research was to find use cases to be used in testing the service with a usability inspection method. However, there were 5 cases in categories that do not support the testing directly. As was mentioned before, these cases may contain useful information for the design of the service overall, but they were not use cases that could be used directly to test the service, as they are outside of the scope of the service itself. If we remove these cases from the comparison, the actual times used to record a single use case increases in the case of the observations from 11 minutes to 14 minutes, which is 33 % longer compared to the 10,5 minutes from the interviews, as can be seen from figure 4.2.

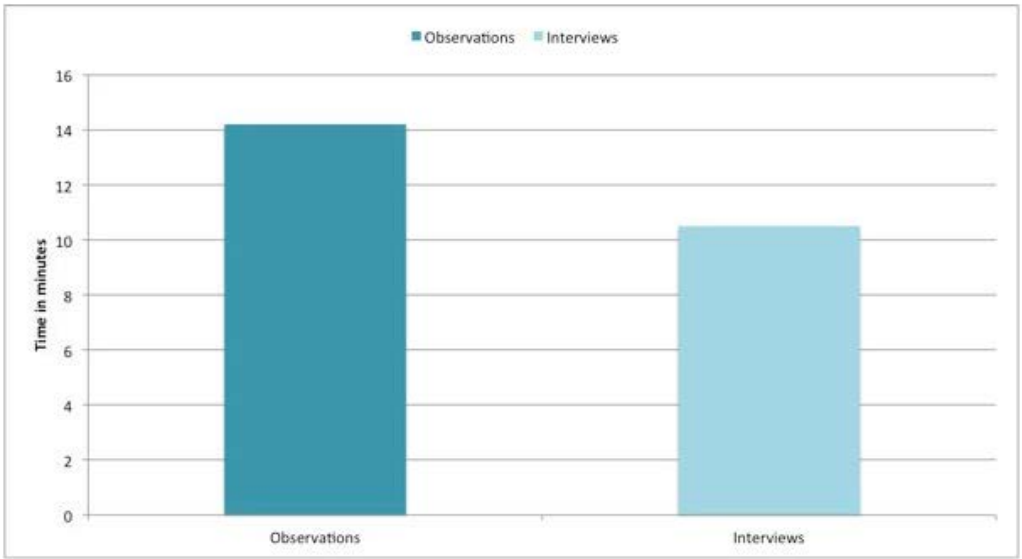

Figure 4.2 Time used to record a relevant use case, divided by method

This analysis only covers the time used for the actual observation and interview sessions, and not the preparation of the sessions or the analysis of the field notes. In this research the work load divided well between the two methods, and neither

one created a substantial amount of extra work compared to the other. As neither of the methods used recordings, or a strictly defined structure, most of the preparation and analysis work consisted of having discussions about best practices and producing use cases based on the field notes.

In conclusion, the interviews were 35 % more efficient in providing use cases for the usability testing of the service compared to the observations if we take into account only the use cases that are directly relevant for the research.

4.2.3 Coverage

This section provides another view of how efficient the methods were by viewing how well they covered the targeted scope. The scope of the research was to target travel, item, accident, and illness categories, which together cover 13 of the overall 20 categories of the service.

The use cases gathered from the observations included cases from 8 of the targeted categories, and the use cases gathered from the interviews included cases from 6 of the categories. Overall there were use cases from 10 of the 13 categories targeted in this research as some of the use cases were overlapping. On a category level, it means that the research included use cases from 77 % of the targeted categories. The observations covered cases from 62 % of the categories while the interviews covered cases from 46 % of the categories. Four of the categories had cases from both the interviews and observations.

On a more detailed level, the service consists of 101 articles from which 64 articles were targeted in this research. From these targeted articles 16 were covered by this research. Observations covered use cases from 11 different articles, while interviews covered use cases from 6 different articles. There was one overlapping article covered by both methods. The relative coverage for the articles was 18 % from the observations and 6 % from the interviews. The following figure shows the coverage for both the categories and the articles.

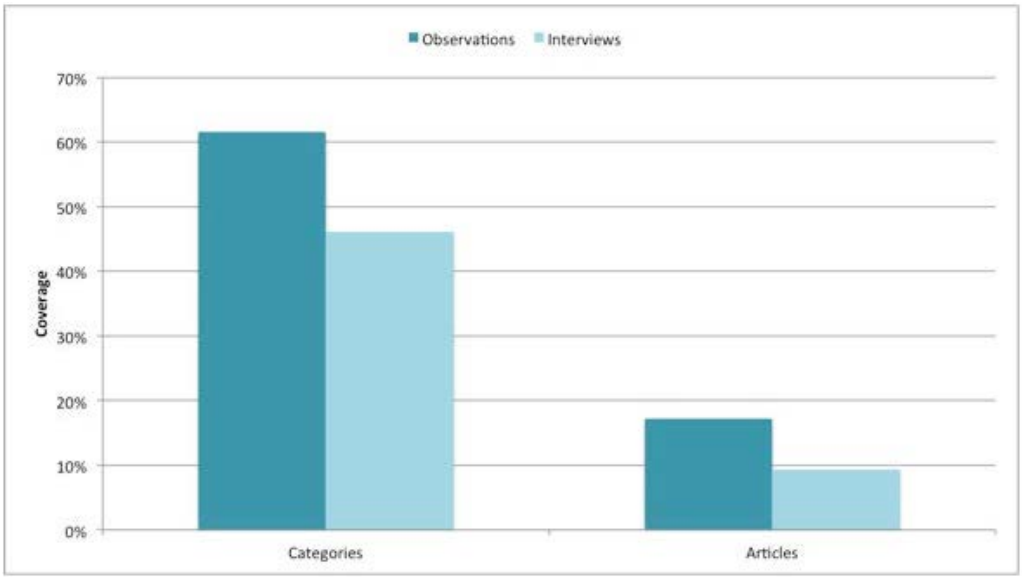

Figure 4.3 The coverage of the use cases

For easier comparison between the methods, the next figure presents the results scaled to reflect the used time. It shows how much, on average, the methods covered of the targeted categories and articles in an hour.

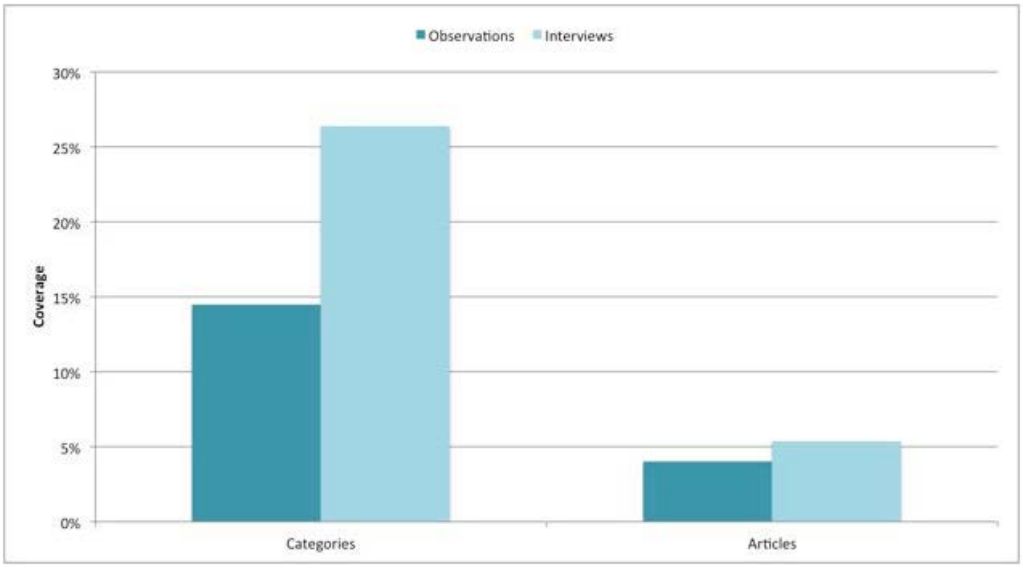

Figure 4.4 The coverage of the use cases per hour

From this figure we can see that the interviews were much more efficient in providing use cases from different categories. The observations were more concentrated on certain few categories, providing only little variety in the cases.

The interviews enabled targeting the categories that did not have any use cases before, and thus provided valuable information compared to the use cases recorded from the observations. Furthermore the interviews also created suggestions for new articles or new information to be added to the existing articles. However, both methods covered the targeted articles equally well.

4.3 Qualitative Analysis

This section presents qualitative findings of the gathered use cases and the methods for gathering them. The method used for the analysis follows a similar process compared to the affinity diagram (Beyer and Holtzblatt 1997). The use cases were first read through, while taking notes about the differences between the use cases. Then there was a brainstorm session about what kind of differences the observations and interviews revealed overall. The ideas from these two sessions were then categorized for further analysis. In contrast to the affinity diagram method, the whole process was done by myself, without a group of experts. Thus the process lacked the benefits of having multiple team members brainstorming and categorizing the ideas.

The affinity diagram method produced three different categories. The first one, Level of details, represents the differences between the use cases. The biggest difference was the amount of details in addition to the basic information. There were also many differences in how thoroughly the use cases presented the situation from the accident itself to the final resolution of how the compensation process continued. The second category, Covering key issues, includes ideas that compare how well the two methods reached the goals of the research. The third category, Benefits from outside the research scope, includes all the ideas that did not fit the first two categories. This last category mainly has differences that do not relate to the research scope, but reveal other interesting aspects of the differences between the methods.

Level of details

The level of details varied a lot between the use cases. The longest recorded use case was 149 words long, while the shortest one was only 19 words long. By having more details in the use cases, they represent the user's situation often better. In this case the more detailed use cases ended up being also the most realistic ones, as they described the users' situation and knowledge well. Velinen (2015) concluded in her research "realistic test tasks revealed usability problems three times more than unrealistic tasks. In addition, the problems found with realistic tasks were more severe i.e. the users were more frustrated and took longer time to overcome their challenges".

The use cases gathered from the observations were much more detailed compared to the ones gathered from the interviews. On average the situation description in the use cases from the observations was 18 words longer than in the use cases from the interviews. The additional details provided, for example, the following type of information:

- Did some given information come as a surprise to the customer; and especially if the surprise was positive or negative?
- Why something came as a surprise? Did they have previous experience from a different insurance product or a different company?
- How much the customers knew beforehand about the process and possible deductions or limitations?
- What information the customer wanted to know?

This type of information was hard to obtain from the interviews, as the cases did not come straight from hearing the customers, but via the interviewees. The level of details also depended more on the interviewee than on the actual cases. The first interviewee remembered much more details about the phone calls compared to the second interviewee.

The observations also gave more thorough use cases. Thoroughness in this context means that the use cases document as much of the whole process as possible. For example, in accident cases it means that there is a description about

how the accident actually happened, what information the customer needs, and how the process continued after the contact point. When designing user interfaces, it is useful to have end-to-end descriptions of the use cases to be able to think about the whole process from the customer's perspective without limiting the scope only to a part of the process.

The use cases from the interviews were mainly more focused on the actual accidents, and the resolution of how the process continued was often neglected. It was much harder to produce full use cases, as the descriptions followed a "this happened first, and then that" -pattern without going into the details of how the customer needed to be guided to continue the claim handling or information providing process. In short: the use cases from the interviews were lacking the dialogue between the customer and the claim handler.

Covering key issues

The research scope was initially quite wide, as the idea was to gather as many useful use cases from the predetermined categories as possible. The research setting was planned to facilitate covering the scope as well as possible, because both the observations and the interviews were divided into multiple sessions, each targeting different category groups of the service. Even though the setting was carefully planned, there was still a lot of variance in how well the results actually covered the key issues of the research.

Targeting the observations to cover different types of use cases ended up being more difficult than originally thought. Although the observed claim handlers were experts in different fields, and therefore were mainly responsible for answering phone calls related to their own expertise, they still took in phone calls also from other areas if there were not any incoming calls for their own expertise at the time. For this reason the observations produced a lot of overlapping issues from similar categories.

For example it was hard to obtain any travel related use cases from the observations, as there just were not many phone calls related to travels. This was one reason why one of the interviews was done with a claim handler specializing

in travel related accidents. Furthermore, phone related accidents were by far the most common ones during the observations, which is why one of the interviews concentrated on obtaining use cases from other item damage categories instead of phones.

The interviews helped to cover the issues that could not be handled by the observations. The observations provided good and detailed use cases from the areas that were covered, but on the other hand the research work was then based on the most popular cases. Targeting the interviews to cover certain types of accidents was much more straightforward. Walji et al. (2014) also votes for using multiple methods, "because it provides a more comprehensive picture of usability challenges".

The interviews also enabled a wider approach of gathering information than just writing down the heard use cases. By asking additional questions about the processes or usual level of knowledge of the customers, it was possible to gain insight into the most problematic areas. Even though lacking the direct contact to the users, it was easier to dive into the key areas of the research. During the observations there was some time to ask questions, but many times the question time was interrupted by the next incoming call. The interviews allowed for more free conversation on the topic, which helped to really understand why some things were done as they were.

All in all, it was more difficult to target the observations to cover a wide range of use cases compared to the interviews. The interviews helped to fill in the gaps after the observations, however lacking the level of details. The observations and interviews worked well together, as they complemented each other's shortcomings.

Benefits from outside the research scope

When looking at the interviews and observations from a wider perspective, the differences were not only in the gathered use cases; there were also differences in other information gained from the sessions. The observations gave a lot of insight into the work of the claim handlers, such as learning how they usually handle

certain types of cases, what systems they use for making the accident claims and handling customer information, and what information is relevant for the claim handling process. Just by sitting next to a professional claim handler, observing and asking questions, it was possible to get to know their work better. This helped with understanding the key points in the whole process of providing value to the customer. Also the direct contact point to the customers gave insight into many aspects of what the customer knows, does not know, and should know when calling the phone service.

On the other hand, the interviews gave more insight into the cases where the customer normally has difficulties understanding how the insurance works. With the interviews it was easier to go through problematic cases, and to find out what the pain points for the customer are. The claim handlers go through tens of cases every day so they have first hand knowledge of the concepts the customers have hard time understanding.

4.4 Findings From the Expert Review

In the first part of the research use cases were gathered, categorized and analysed by using observations and interviews. In the second part the use cases worked as scenarios when testing the service with a usability inspection method. This section presents the findings from the second part of the research; first categorized based on the type of the finding and then by the severity of the finding.

4.4.1 Categorization of the findings

Based on the usability inspection the findings were divided into 7 different categories explained in more detail below. Findings in this context mean problems or other notions that arose while simulating the user interface with the use cases provided by the interviews and observations. For example in one phone call the customer was asking if she gets compensation also from Kela, so it lead to a finding: "There is no information about Kela (The Social Insurance Institution of Finland)".

Often usability findings are categorized based on the basic aspects of usability, such as learnability and efficiency (Nielsen Norman Group 2012). However in the case of the tested web service, the basic usability findings were in a smaller role than is usual, as the service consists mainly of static pages. Thus the categorization presented below makes more sense, as it takes into account the way in which the issues should be handled. For example the findings in the False information category mean that the false information should be changed or removed, and the findings in the Needs further investigation mean that the we do not have enough information about the problem to continue straight away with a fix. The seven categories are as follows:

Not Relevant for the research

This category consists of problems that are outside of the scope of the research. For example there were many calls where the customer was asking for the time it takes to get the compensation money after filing an accident claim. Even though these types of findings help with the overall development of services for the customers, they do not help directly in the development of this particular web service, and are thus categorized separately from the other findings.

New Article

Some of the use cases were outside of the current scope of the existing service, which suggests that there might be a need for creating new articles or adding the information to existing articles. A major part of the findings in this category were related to household accidents, such as, a broken toilet seat or other accidents that might need for example help from an electrician.

False Information

The findings in this category indicate that there was some kind of false information in the articles. Common examples include directions that guide the user to do wrong things compared to the optimal process, or incorrect information about compensation amounts. In these cases the user is still often

able to get the needed help, but might face negative surprises about the compensation amounts or cause unnecessary costs.

Insufficient Information

These findings indicate that the information in the article was too vague or imprecise. There were also findings where the needed information was simply missing from the instructions, even though it was relevant to the case. For example, the article might miss the information that the customer should save the receipts, if they are needed later on in the process.

Content or Layout

The findings in this category are mostly relatively small problems that relate to difficult wording, too long paragraphs, or illogical order of information. By fixing the issues in this category the flow of the article pages would improve and it would be easier for the user to find the right information. For example, if the customer's phone broke, the article guides to take it to repair if it is worth repairing. The sentence is otherwise fine, but the content does not really tell the customer what kind of damage is worth repairing, and it makes the client do the work of finding out whether or not to get the phone fixed.

Expert Needed

Some of the use cases were margin cases where the customer actually needed help from the expert claim handler. In those cases the web service, as the only source of information, would have been insufficient. Also the situation of some of the customers was such that the information they were seeking was only accessible via the phone service, and not through a web service.

Needs Further Investigation

The findings in this category could not be seen straight as problems, as there was not enough information to determine whether the content was actually correct. Thus to assess these findings it is necessary to seek for further clarification. Often

these cases happened because of contradictory information between guidance from the service and guidance that the customer had received via other channels.

Overall there were 60 findings recorded during the expert review. The results are presented in the figure below.

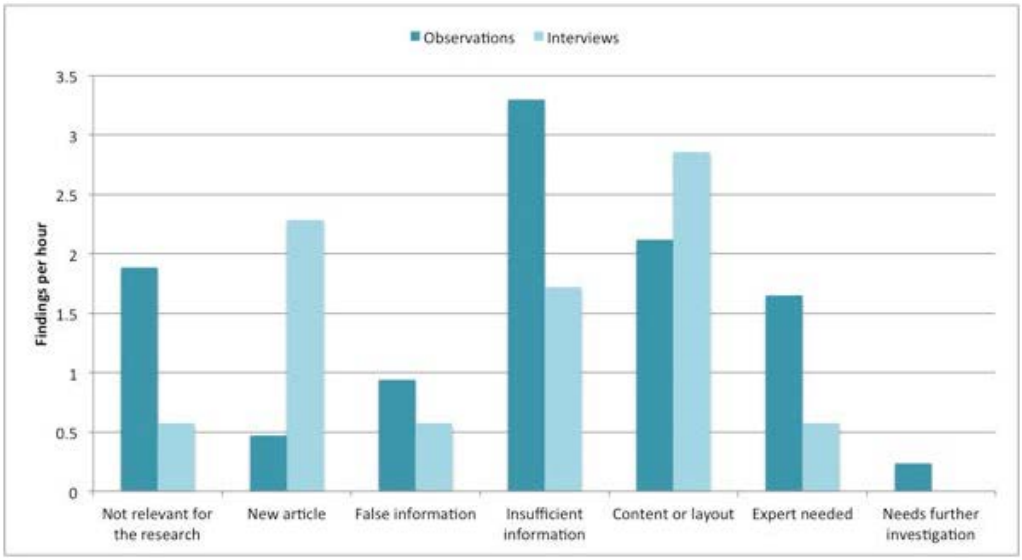

Figure 4.5 Average amount of findings per hour from the expert review

The use cases from the observations produced almost three times more findings in the Not relevant for the research and the Expert needed categories, compared to the interviews. Also the amount of findings in the Insufficient information category is almost twice the amount of findings from the use cases from the interviews. The use cases from the interviews produced over four times more findings to the New article category, and also clearly more findings to the Content or layout category.

This categorization gives support to many of the same conclusions as the categorization of the use cases. The observations produced more findings in the categories that are not directly connected to the development of the service: Not relevant for the research, Expert needed, and Needs further investigation categories. At the same time the interviews created more findings to support the creation of new articles or additional content. The level of details in the use cases

from the observations helped to find more issues related to insufficient information. However, the use cases from the interviews produced more findings to the Content or layout category. One reason for this might be that many of the use cases from the interviews described situations where the user might have problems understanding the insurance process. Thus they revealed more problems related to the structure of the content.

4.4.2 Severity of the findings

The findings were also categorized to three different categories: minor, medium, and critical, based on the severity of the finding. The minor category includes small problems, for example, some missing information that could be useful for the customer. The medium category includes findings that are a bit more severe in the means of missing or misleading information. The critical category mainly consists of findings that revealed false information, which might lead the customer doing things that are not optimal for the process. The following figure presents the average amounts of findings in each category per hour.

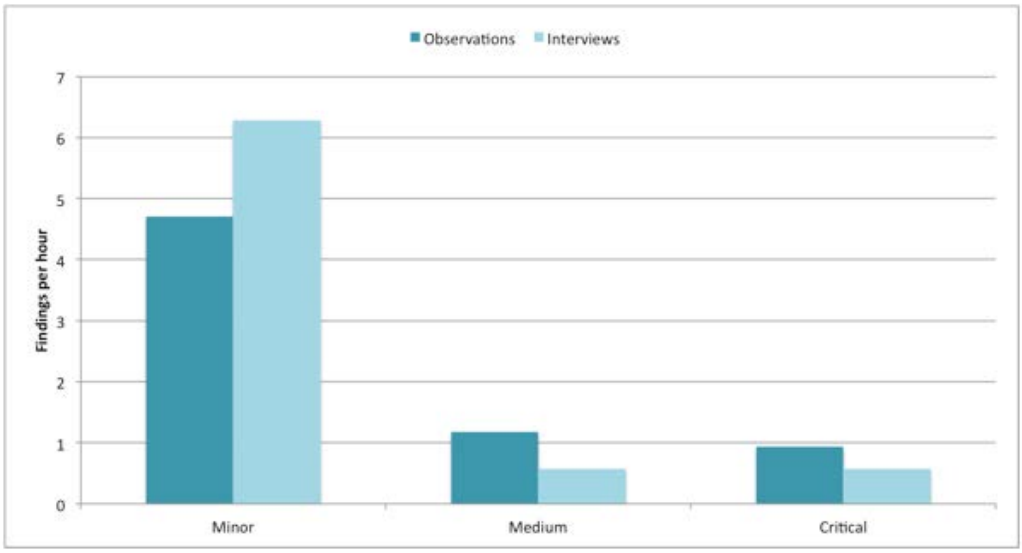

Figure 4.6 Findings divided by severity

As seen from the figure above, the observations created more findings to the medium and critical category, while the interviews created more findings to the minor category. The use cases from the observations were more detailed, which probably lead to finding more serious problems compared to the interviews. On

the other hand, the interviews produced a wider range of use cases for the problematic areas of the service, which explains the larger number of findings in the minor category.

4.5 Summary of the Results

This section presents a summary of the results of the research. The first part lists all the core findings, and the second part gives guidelines in a "lessons learned" format for choosing the best methods for gathering use cases.

4.5.1 Core findings

These core findings give a summary of the pros and cons of each method found during the research.

Observations

- Detailed and thorough use cases
- Insight into the work of the claim handlers
- Insight into the customers' knowledge level of how the insurances work
- Revealed more severe findings compared to the interviews
- Revealed many findings about insufficient information
- A lot of overlapping issues from the same accident categories
- A large amount of use cases that were not relevant for the scope of the research
- Targeting the observations to cover a large variety of use cases was difficult

Interviews

- More use cases about basic accident claim situations

- Easier to target to relevant topics
- Created more findings about the structure of the content and layout and suggestions for new articles
- Allowed for more free conversation, which helped to understand why some things were done as they were
- More insight into the cases where the customer has difficulties understanding how the insurance works
- Lacked the dialogue between the customer and the claim handler
- Less details in the use cases

4.5.2 Lessons learned

To derive useful information out of the core findings, it is important to review the process of doing a research like this in it's entirety. The answer to the third research question of how to choose between the methods cannot be answered solely by listing the main differences. By conducting this research, a big amount of insight was gained in addition to the main findings concluded in the previous sections. A lot of decisions were made, and not all of them lead to an optimal result. Many decisions were influenced by a tight schedule or difficult access to certain resources. Thus it is useful to view all the main decision points in this research and give guidelines on how to optimize the use of the methods, and to help with the process of choosing the right methods for the right situation.

This section goes through a set of decision points and gives insight into the decisions that were made during this research. By bringing forth problematic areas of conducting this research, it is possible to reflect what could be done differently. The conclusion is a set of guidelines for the different parts of the research, where the researcher needs to do decisions about the used methods. In short the decision points are: planning the outcome, scoping the research, identifying possibilities, iterating the plans, having a backup option and combining the methods.

Plan what kind of data you need

Planning a research starts with planning what kind of data you need. It is hard to choose which methods to use if there is no knowledge of the preferred data. Plan how detailed or abstract information is needed, and how much data needs to be created. If there is a need for detailed and realistic data in the use cases, getting closer to the actual users becomes more vital. When more abstract information is needed, it might be better to approach second hand sources such as experts who work with the users. The experts usually have a better overall view on topics such as: "What are the most common cases?", "What usually goes wrong?", and "Which ones are the most difficult cases?"

Observations usually give more detailed and realistic data compared to the interviews, which was also the case in this research. Observations and interviews were a good choice for this research, as there was a need for both detailed data and more abstract level conversations with the claim handler experts. It was a good decision to use both methods, as the interviews enabled wider discussions about why certain cases are handled as they are and what types of data comes as a surprise for the customers. Naturally these topics also came up during the observations, but only considering particular cases. During the observations there was no time to expand the conversation outside of the handled cases.

Create a clear scope for your research

When doing research, one should always have a clear scope in mind. What are the goals of the research? What needs to be covered? By setting a clear scope, it is easier to choose the best methods. If you need to cover a wide range of topics, be sure to choose a method that enables you to do so. Observations might not be the best method, if you cannot target them the way you want to.

Interviews help with targeting the research to the wanted aspects, but it might be hard to find the right interviewees. Even if they are working with the exact thing you are trying to get data out of, all people are different. You might get totally different results from different experts. With interviews it is important to plan

who you are going to interview, how and why. By having a clear scope you can minimize work that does not provide useful results.

For this research I always had a clear goal when I started the sessions. Even though the methods I used gave a lot of freedom to branch to different topics, I still knew what I wanted to get out of the sessions. With the semi-structured interviews I gave a lot of freedom to the interviewees to talk about topics that they considered important, but at the same time I was strict about making sure that I could form use cases out of the conversations. Whenever the interviewees described a phone call on an abstract level, I instantly demanded more details about the situation and about the conclusion of the compensation. By having a clear scope of what type of information is needed from the sessions, it is possible to reduce the downsides of the used methods and thus reduce the costs of choosing an unsuitable method for the situation.

Identify the possibilities with the different methods in your particular environment

The possibilities of choosing a method varies between projects. Sometimes it is almost impossible to get the right people for interviews, while in some projects observations might be impossible or very expensive to do. To overcome extra costs that certain research methods might produce, be sure to identify all the different possibilities you have in your situation. For example in the case of phone service observations it might be useful to investigate if there are recordings of the phone calls. If the phone calls are recorded and categorized, it would make it a lot easier to target the research to cover multiple areas. On the other hand, using only recordings you could lose the opportunity to ask questions between the phone calls. Hence a combination might be optimal.

For the interviews it is useful to find out whom you could interview. Even though when gathering use cases it is often best to interview the people who are in closest contact with the actual end users, it might be interesting to also interview someone, who has a more high level view of the usage situations. For example in this research the first interview was done with a claim handler, who is working directly with the customers. This interview provided detailed use cases, which

were really useful when testing the service. The second interview was done with a person, who did not do direct customer work at the time, but had been doing it for a long time before, and was responsible for the travel related accidents category. This interview lacked some details, but gave good input on what are especially problematic cases inside the travel category. Thus choosing the interviewees carefully has a huge impact on the achieved results.

Enable iterating your research plan

By doing a pilot research first, or by dividing your research so that you have time to iterate your way of working, minimizes the risk of using methods that do not produce the results you want. If you notice in your first research session that the observations do not produce versatile enough results, or you would need more time for asking questions, you can always improve your methods for the second session. If you notice that a semi-structured interview gives too much space for conversation that is not helping to achieve results, make sure that you have time to iterate on the interview structure. A pilot research might increase the effectiveness of your overall research greatly. Do not book 5 observation sessions for the first day just to notice that they do not go as planned.

In this research there were three observation sessions in a row on the first day of conducting the research. This was mainly to save time from the manager of the department, who helped to organize the sessions. Even though it was practically easy to go from one session to another, there was no time to iterate the ways of working between the sessions. It was also quite stressful and cognitively overloading to concentrate on the observation sessions for many hours in a row. Even though the sessions went well, it could have been a recipe for a catastrophe. For example in the first observation session I tried to take photos of the claim handlers' screens to record the interface the claim handlers were using, but I soon realized that for this research it was not reasonable to investigate the interface any further, as the main focus was on the actual use cases.

Have a backup plan, if something goes wrong

A backup plan might save you from many situations. Think already ahead, if the first method you are using does not work, how would you approach the same issue with another method. In this research the observations did not produce almost any cases from the travel category, but by choosing a travel expert for the interviews, it was still possible to get a good variety of cases regarding travel related accidents.

Combine multiple methods

As could be seen from the results, both methods had their positive and negative aspects. However especially with the observations and interviews the results were quite different, and the methods complemented each other. When choosing your research methods, do not think that you have to stick to only one method. The methods are not meant to be used decisively by themselves. It is ok, and often a good thing, to combine different methods, even during one session. For example, this research would have benefited from saving more time for interviewing the claim handlers during the observation sessions, as the phone calls raised interesting conversations about the claim handling process.

5 Conclusion

This research compared observations and interviews in gathering use cases for testing a user interface with the usability inspection method. The research was conducted as a case study in a Finnish insurance company's customer service. The following sections provide the final conclusion of the research by relating the results to the original research questions and by giving guidelines to help designers choose between the different methods.

5.1 Relating the Results to the Research Questions

The first research question was: **What are the main differences between the use cases provided by interviews versus observations?** The main differences can be summarized in the following sentences:

- Observations gave more detailed and thorough use cases, but many of the use cases overlapped with each other, as it was hard to cover a variety of cases.

- With the interviews it was easier and more efficient to target the research to cover the wanted use cases, but the uses cases lacked detail and were dependent on the interviewees' memory of details.

The second research question was: **What are the main differences in results, when applying usability inspection methods to test a user interface with use cases obtained from interviews versus observations?** The main differences were as follows:

- The use cases from the observations produced more severe findings, especially on areas where the web service was lacking detailed information.

- The use cases from the interviews created more findings about the structure of the content and layout. They also gave suggestions for new topics to be added to the service.

The last research question was: **How to choose between observations and interviews as a method for gathering use cases?** Guidelines for choosing the best method were presented in section 5.4.2. Here is a summary of the guidelines:

- Plan what kind of data you need
- Create a clear scope for your research
- Identify the possibilities with the different methods in your particular environment
- Enable iterating your research plan
- Have a backup plan, if something does not go as planned
- Combine multiple methods

Choosing a method is not an easy task. It is not only a question of what is the best method overall, but instead, what is the best method in this particular situation with a particular deadline and budget.

6 Discussion

This chapter discusses the research on a more abstract level. First section 6.1 goes through the restrictions of the research. Then 6.2 describes how the results can be generalized and what could be learned from the research, based on the overall experience of conducting the research. 6.3 gives suggestions for future research, and finally 6.4 closes the chapter with some final words.

6.1 Restrictions of the Research

This research was done to gain results from actually implementing a small-scale research in the middle of a software development project at a customer's premises to benefit the project's interest and to gain insight into using different methods for gathering use cases. Thus there were lots of restrictions from the availability of resources. Conducting interviews and observations takes up time from professionals whose work I was there to observe. Therefore it was a compromise between driving my own intentions of this research as an academic effort and benefiting the customer and the project as well as possible. The sessions could have been planned better from the academic perspective, but then the benefits to the project would have required more resources. For example, a bigger amount of observations and interviews would have given more data to analyze for the research, but on the other hand it was not reasonable to conduct a larger research at this stage of the project. At the time of the research there was already a large amount of necessary fixes still unimplemented, which would have meant that a many of the improvement ideas could not have been handled soon enough after the research. It makes more sense to conduct more usability evaluations later on in the project.

Another restriction is that it is hard to replicate the research as such. The application of the methods was not based on strict, predetermined structures, as the nature of the sessions was quite freeform. There were goals set for the

outcome of the sessions, but otherwise the situations were quite unique. Even if a similar research was to be done in similar conditions, the implementation of the methods would most likely differ from this research.

6.2 Generalizing the Results

This aim of this research was to find differences between two methods, and to provide guidelines to help designers choose between the methods. Even though the research itself was tied to the goals of the design project it was conducted in, it was still possible to summarize the learnings into general guidelines presented in section 4.4.2. In fact, the most valuable lessons learned came from analysing the results and thinking about what could be done differently. There were also many aspects that were hard to predict beforehand, such as the difficulties in targeting the travel related observations. Taking into account the nature of the research and the restrictions on the scope of the research, the learnings can still be generalized to other research.

The tested service was also quite unusual compared to the majority of usability research, as it did not have that many dynamic elements, or a complicated navigation pattern. Often academic research targets systems where the UEMs reveal usability problems in a more traditional sense, not concentrating mainly on the content and layout. Thus it might be hard to generalize the results from the usability inspection. Compared to the metrics suggested for UEM comparison by Hartson, Andre, and Williges (2001): thoroughness, validity and effectiveness, this research did not bring that much to the table. Relating to the UEM comparison research, the aspects described by Filippi and Barattin (2012): costs and time, did get some notions from this research, even though interviews and observations are not exactly UEMs.

6.3 Suggestions for Future Research

This research was done without actually having a direct, two-way contact with the end users. This is only one way of utilizing observations and interviews, and it is not the most used one or often even the best one. Still it was the best method at that particular phase of the project. This does not mean that all aspects of the research went as well as they could. Many of the things I would do differently relate to the fact that I was mainly conducting this research by myself, without the direct support from fellow team members. To get the most out of a research like this, it would have been reasonable to participate other people in the process. For example the qualitative analysis of the data would have benefited from a group of people creating a proper affinity diagram. It would also have been interesting to have other people use the same use cases for the usability inspection. Unfortunately comparison between different expert evaluators was outside of the scope of this research.

Another interesting way of gathering use cases would have been to gather use cases from chat logs of the customer service, as the company uses chat as a tool for customer support. In practice, at some particular web pages, a small chat window opens providing assistance to the user. The chat logs are saved into a system, which enables easy access to a large amount of customer service data. The cases might be more restricted, as the user is already browsing a web site, and often needs help only with the user interface, or other specific parts of the service. Nonetheless, it would be reasonable to try to collect use cases from the chat logs, and to compare the results to the ones gained from this research. Especially is such chat could be implemented to the tested guidance web site.

Even though the research was done as a small-scale project on purpose, from an academic point of view it would have been relevant to implement a larger research. It would have made the quantitative analysis more interesting, as it could have revealed more differences between the observations and interviews. A larger number of participants would also have reduced the influence of individual participants.

6.4 Final Words

This research compared interviews and observations in gathering use cases for a usability inspection. The methods were used in a pragmatic way, concentrating on effectively gaining use cases for testing an insurance guidance web service. The research pointed out many usability problems from the service, and documented a large number of use cases that can be utilized in future usability evaluations. It also gave insight into how the claim handlers work, what are common problems for the customers, and helped to realize what are the crucial decision points when conducting a usability evaluation research.

The results indicate that there is a difference between interviews and observations, when used to gather use cases. Observations gave more detailed data, but interviews were able to cover areas in the service, which were hard to target with the observations. This suggests that it would be beneficial to use a combination of the two methods. As the research was conducted in a very specific situation, the results may be hard to generalize as such, but the learnings from making the research created useful guidelines to help with future research.

7 References

Andre, Terence S., Robert C. Williges, and H. Rex Hartson. 1999. "The Effectiveness of Usability Evaluation Methods: Determining the Appropriate Criteria." *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* 43 (20): 1090–94. doi:10.1177/154193129904302007.

Beyer, Hugh, and Karen Holtzblatt. 1997. *Contextual Design: Defining Customer-Centered Systems*. 1 edition. San Francisco, Calif.: Morgan Kaufmann.

Bias, Randolph G., Brian M. Moon, and Robert R. Hoffman. 2015. "Concept Mapping Usability Evaluation: An Exploratory Study of a New Usability Inspection Method." *International Journal of Human-Computer Interaction* 31 (9): 571–83. doi:10.1080/10447318.2015.1065692.

Bowman, Doug A., Joseph L. Gabbard, and Deborah Hix. 2002. "A Survey of Usability Evaluation in Virtual Environments: Classification and Comparison of Methods." *Presence: Teleoperators and Virtual Environments* 11 (4): 404–24. doi:10.1162/105474602760204309.

Chattratichart, Jarinee, and Jaqueline Brodie. 2004. "Applying User Testing Data to UEM Performance Metrics." In, 1119. ACM Press. doi:10.1145/985921.986003.

Conte, T., J. Massollar, E. Mendes, and Guilherme H. Travassos. 2007. "Usability Evaluation Based on Web Design Perspectives." In *First International Symposium on Empirical Software Engineering and Measurement, 2007. ESEM 2007*, 146–55. doi:10.1109/ESEM.2007.30.

Duh, Henry Been-Lirn, Gerald C. B. Tan, and Vivian Hsueh-hua Chen. 2006. "Usability Evaluation for Mobile Device: A Comparison of Laboratory and Field Tests." In, 181. ACM Press. doi:10.1145/1152215.1152254.

Fernandez, Adrian, Emilio Insfran, and Silvia Abrahão. 2011. "Usability Evaluation Methods for the Web: A Systematic Mapping Study." *Information and Software Technology*, Advances in functional size measurement and effort estimation - extended best papers, 53 (8): 789–817. doi:10.1016/j.infsof.2011.02.007.

Filippi, S., and D. Barattin. 2012. "Generation, Adoption, and Tuning of Usability Evaluation Multimethods." *International Journal of Human-Computer Interaction* 28 (6): 406–22. doi:10.1080/10447318.2011.607421.

Følstad, Asbjørn, Effie Lai-Chong Law, and Kasper Hornbaek. 2010. "Analysis in Usability Evaluations: An Exploratory Study." In *Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries*, 647–50. NordiCHI '10. New York, NY, USA: ACM. doi:10.1145/1868914.1868995.

Gray, Wayne D., and Marilyn C. Salzman. 1998. "Damaged Merchandise? A Review of Experiments That Compare Usability Evaluation Methods." *Human-Computer Interaction* 13 (3): 203.

Greenberg, Saul, and Bill Buxton. 2008. "Usability Evaluation Considered Harmful (Some of the Time)." In, 111. ACM Press. doi:10.1145/1357054.1357074.

Hackos, JoAnn T., and Janice C. Redish. 1998. *User and Task Analysis for Interface Design*. 1st edition. John Wiley & Sons, Inc.

Hartson, H. Rex, Terence S. Andre, and Robert C. Williges. 2001. "Criteria for Evaluating Usability Evaluation Methods." *International Journal of Human-Computer Interaction* 13 (4): 373–410. doi:10.1207/S15327590IJHC1304_03.

Hertzum, Morten, and Niels Ebbe Jacobsen. 2001. "The Evaluator Effect: A Chilling Fact About Usability Evaluation Methods." *International Journal of Human-Computer Interaction* 13 (4): 421–43. doi:10.1207/S15327590IJHC1304_05.

Hornbaek, Kasper, and Erik Frokjaer. 2004. "Usability Inspection by Metaphors of Human Thinking Compared to Heuristic Evaluation." *International Journal of Human-Computer Interaction* 17 (3): 357–74. doi:10.1207/s15327590ijhc1703_4.

Hornbæk, Kasper, Rune Thaarup Høegh, Michael Bach Pedersen, and Jan Stage. 2007. "Use Case Evaluation (UCE): A Method for Early Usability Evaluation in Software Development." In *Human-Computer Interaction – INTERACT 2007*, 578–91. Lecture Notes in Computer Science 4662. Springer Berlin Heidelberg.

Jacobsen, Niels E. 1999. "Usability Evaluation Methods, Cognitive Walkthrough, Usbaility Test, Thinking Aloud Test." PhD thesis, University of Copenhagen.

Laakso, Sari A., and Karri-Pekka Laakso. 2004. "Ensuring Quality of the User Interface with the GUIDe Process Model." Unpublished article. University of Helsinki, Dept. of Computer Science: Unpublished article.

Matera, M., M.F. Costabile, F. Garzotto, and P. Paolini. 2002. "SUE Inspection: An Effective Method for Systematic Usability Evaluation of Hypermedia." *IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans* 32 (1): 93–103. doi:10.1109/3468.995532.

Nielsen, Jakob. 1994. "Usability Inspection Methods." In, 413–14. ACM Press. doi:10.1145/259963.260531.

Nielsen Norman Group. 2012. "Usability 101: Introduction to Usability." https://www.nngroup.com/articles/usability-101-introduction-to-usability/.

Nielsen Norman Group. 2014. "Task Scenarios for Usability Testing. Turn User Goals into Task Scenarios for Usability Testing." https://www.nngroup.com/articles/task-scenarios-usability-testing/.

Niès, Julie, and Sylvia Pelayo. 2010. "From Users Involvement to Users' Needs Understanding: A Case Study." *International Journal of Medical Informatics*, Human factors engineering for healthcare applications special issue, 79 (4): e76–82. doi:10.1016/j.ijmedinf.2009.06.007.

Power, Christopher, and John Fox. 2014. "Comparing the Comprehensiveness of Three Expert Inspection Methodologies for Detecting Errors in Interactive Systems." *Safety Science* 62 (February): 286–94. doi:10.1016/j.ssci.2013.08.003.

Rivero, L., G. Kawakami, and T. Conte. 2014. "Using a Controlled Experiment to Evaluate Usability Inspection Technologies for Improving the Quality of Mobile Web Applications Earlier in Their Design." In *2014 Brazilian Symposium on Software Engineering (SBES)*, 161–70. doi:10.1109/SBES.2014.24.

Saarikangas. 2012. "Käytettävyysprosessit Ketterässä Ohjelmistokehityksessä." Bachelor's thesis, Aalto University, School of Science.

Schuler, Douglas, and Aki Namioka. 1993. *Participatory Design: Principles and Practices*. CRC Press.

Silva da Silva, T., M. Selbach Silveira, and F. Maurer. 2015. "Usability Evaluation Practices Within Agile Development." In *2015 48th Hawaii International Conference on System Sciences (HICSS)*, 5133–42. doi:10.1109/HICSS.2015.607.

Simell, T. 2015. "Personal Communication." Helsinki.

Somervell, Jacob, and D. Scott McCrickard. 2004. "Comparing Generic Vs. Specific Heuristics: Illustrating a New UEM Comparison Technique." *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* 48 (21): 2480–84. doi:10.1177/154193120404802108.

Travassos, Guilherme, Forrest Shull, Michael Fredericks, and Victor R. Basili. 1999. "Detecting Defects in Object-Oriented Designs: Using Reading Techniques to Increase Software Quality." *SIGPLAN Not.* 34 (10). New York, NY, USA: ACM: 47–56. doi:10.1145/320385.320389.

Valentim, Natasha M. Costa, Tayana Conte, and José Carlos Maldonado. 2015. "Evaluating an Inspection Technique for Use Case Specifications - Quantitative and Qualitative Analysis:" In, 13–24. SCITEPRESS - Science; and Technology Publications. doi:10.5220/0005374100130024.

Velinen, Tuija. 2015. "Testitehtävän Realistisen Muotoilun Vaikutus Käytettävyystestin Tuloksiin." Master's thesis, Aalto University.

Viljakainen, A. 2015. "Personal Communication." Helsinki.

Walji, Muhammad F., Elsbeth Kalenderian, Mark Piotrowski, Duong Tran, Krishna K. Kookal, Oluwabunmi Tokede, Joel M. White, et al. 2014. "Are Three Methods Better Than One? A Comparative Assessment of Usability Evaluation Methods in an EHR." *International Journal of Medical Informatics* 83 (5): 361–67. doi:10.1016/j.ijmedinf.2014.01.010.

Wilson, Chauncey. 2014. *Interview Techniques for UX Practitioners a User-Centered Design Method*. Waltham, MA: Morgan Kaufmann.

Appendix A

Use cases

Observation 1, sudden illness of a child, delayed claim handling – (Lapsi sairastui äkillisesti)

Situation: Customer's child was ill, and an insurance claim was made on the 6th of November. The customer has not received any response, nor received any money.

Information:

- It is 25th of November now.
- Customer had contacted the insurance company before via the online customer service, but had not heard anything back.
- Customer wants to know if he needs to send receits or some other information to make the claim proceed to payment.

Result: The claim is processed at the moment, the payment will be on the customer's account in a few days. The delay is due to a peak number of claims at the moment.

Observation 2, traveling canceled due to sudden illness, power of attorney – (Lomamatka peruuntui)

Situation: The customer needed to cancel a trip due to a sudden illness, and his wife filed the accident claim. He wants to receive the payment to his bank account, but received an email that he needs a power of attorney for this, as it was his wife who filed the claim.

Result: The power of attorney was made via the phone call, and the claim handling could proceed to payment.

Observation 3, sudden illness / accident, delayed claim handling – (Sairastuin äkillisesti)

Situation: The customer's wife needed to go to the hospital, and she paid it herself. She filed the accident claim online, but has not received payment or heard anything back since filing the claim.

Information:

- The hospital visit cost 320€
- She had sent a message and called before.
- During the last call she was told that she might not even have the the right insurance to cover the expenses.
- The customer knows that she has Mittaturva insurance with Tapaturma- and Hoitokulu-vakuutus.

Result: The accident is processed in a new claim handling system, where the claim handler doesn't have access to the details yet. Thus he can only say that it is in process. The delay is due to a peak number of claims at the moment.

Observation 4, sudden illness / accident, delayed claim handling – (Sairastuin äkillisesti)

Situation: The customer had filed a claim in the previous week and has not yet received any money.

Information:

- The customer wants to know how long does it take to receive the payment.
- There was a phone call about some details on Monday (it is Wednesday now).

Result: The claim was processed on Monday, so the payment should be on the customer bank account latest tomorrow (Thursday).

Observation 5, sudden illness, accident claim – (Lapsi sairastui äkillisesti)

Situation: Customer's son had been ill, and thus twice to the hospital. The customer could not file the accident claim online, so he wants to do it via phone.

Information:

- There were expenses from the doctor visits, lab and medicine.

Result: The claim handler asked all the relevant questions and filed the insurance claim.

Observation 6, accident, intormation – (Loukkaannuin vapaa-ajalla)

Situation: Customer fell down accidently and hurt her shoulder. She went to the hospital and needs to go to an x-ray on Friday. She wonders how do the compensations from the insurance company relate to Kela compensations, or if she might get allowance (päiväraha).

Information:

- No expenses are paid yet, as the hospital has not sent a bill yet.
- The x-ray is further away, so she will need a taxi.
- She has Vapaa-ajan tapaturmavakuutus and Yrittäjän tapaturmavakuutus.
- She is not an entrepreneur anymore.

Result: All expenses except allowance are compensated from her insurance. The customer is guided to file an accident claim online. A phone time is reserved to cancel her Yrittäjän tapaturmavakuutus.

Observation 7, sudden illness, information – (Sairastuin äkillisesti)

Situation: Customer had done accident claims (paper versions) about some old illness expenses. She does not know where to send them.

Information:

- There are delays in the postal service.
- The instructions said to send them to Hiomotie.
- She had asked about it a month ago, but the someone had said to do it online, even though the instructions had said to also send all attachments via post.
- Her insurance is one of the old Suomi-yhtiöt insurances, still valid until 2056 or something. That is why there are some conflicting instructions about them.

Result: She can deliver them to Teollisuuskatu 1.

Observation 8, accident, information (Loukkasin itseni urheillessa)

Situation: The customer had a sports related accident a month ago and hurt his knee. They only found minor tears in the knee at that point. Now a month later the knee is still hurting.

Information:

- There were some doctor visits and an MRI included.
- The customer's company doctor could give an admission note to a physiotherapist

Result: The insurance doesn't cover the physiotherapy, as there was no fracture, surgery or plaster involved. The customer is guided to go and see an ortopedist again, if the knee is still hurting. He can go to Koskiklinikka or Terveystalo, pay

for the ortopedist himself and then file an accident claim to get the expenses covered.

Observation 9, illness, information (Sairastuin äkillisesti)

Situation: Customer's wife had seen an eye specialist a year ago, and the diagnosis was that she was developing cataract in her eye. Does her insurance cover cataract related illnesses?

Information:

- She has Mittaturva with sairaskuluvakuutus.

Result: The eye specialist visit happened before the insurance terms changed, so it still covers cataract related doctor visits and surgery, even though according to the new terms it wouldn't. It was lucky that the diagnosis was made before the year 2015, when the terms changed.

Observation 10, accident, information – (Silmä- tai aurinkolasit rikkoutuivat)

Situation: The customer had a seizure while jogging on Monday evening. He fell down and broke his eyeglasses.

Information:

- Otherwise he is fine, but he's asking about how the process goes with the eyeglasses.
- The customer does not have accident insurance (tapaturmavakuutus), but only home insurance (kotivakuutus).

Result: He can can file an accident claim to his home insurance, and get compensation for the glasses.

Observation 11, accident, accident claim – (Loukkasin itseni vapaa-ajalla)

Situation: The customer has expences from an MRI.

Information:

- She tried to make the accident claim online, but it didn't work.
- She went to Helsingin Magneettikuva for the MRI, which is not a partner.

Result: She needs to deliver the receipt and the invoice. She can send them with the accident id (vahinkotunnus).

Observation 12, accident, information – (Loukkasin itseni vapaa-ajalla)

Situation: Customer's son had an accident with his hand and needs a surgery asap.

Information:

- The customer had called Omasairaala and Terveystalo (Oulu) to find out when they could operate on the hand.
- The customer wanted to know if it's ok to go to Terveystalo, or is it necessary to go to Omasairaala, as Terveystalo could operate earlier.

Result: It's ok to go to Terveystalo, a commitment (maksusitoumus) can be sent to Terveystalo, as it is a partner.

Observation 13, accident, delayed claim handling (information) – (Loukkasin itseni vapaa-ajalla)

Situation: The customer had seen a doctor twice, as her wrist was hurting. She needs to show it to a specialist.

Information:

- She would like to go to Omasairaala to show the hand to a specialist.
- She had fallen down last spring. The wrist had hurt for a few days, but the pain had disappeared, and she didn't need to see a doctor then.
- The pain came back in the fall, as she started working.
- She had taken the insurance in the beginning of the fall, and thus she needs to write detailed reports about the incident, as there was no mention about her wrist in her initial health report.

Result: The customer needs to write a report on how the accident happened in the spring, and how the pain came back now in the fall. She also needs a statement from the doctor she already visited.

Observation 14, illness / accident, call redirection

Situation: The customer had called 5 minutes ago, and talked with another claim handler.

Result: Redirected the call to the right person.

Observation 15, accident, information – (Loukkasin itseni vapaa-ajalla)

Situation: The customer's son had hurt his shoulder. He had visited a doctor at Dextra.

Information:

- The customer was worried if it was ok that they didn't go to Omasairaala in the first place.

Result: The accident claim can be made online. Omasairaala would have been easier, for future reference.

Observation 16, accident, delayed claim handling / information / accident claim – (Loukkasin itseni vapaa-ajalla)

Situation: The customer had been to a doctor at Terveystalo on Monday (today it's Wednesday). The customer's wife had filed an accident claim online, but they hadn't heard anything afterwards.

Information:

- The doctor had also called about directing to a physiotherapist, but unfortunately the insurance doesn't cover it, as there wasn't a fracture etc. This came as a surprise for the customer. Booked a time to check the contents of the insurance with an expert.

Result: For some reason the accident doesn't show in the system. A new one is made.

Observation 17, phone, information – (Matkapuhelin rikkoutui)

Situation: Customer's iPhone 5 broke down and she had already filed an accident claim online. She received a message that she should take the phone to mcare to get a replacement phone.

Information:

- She lives in Leppävaara.
- Closest mcare is in Ruoholahti.

Result: She needs to go to mcare to get a replacement phone for 349€, and then she can get compensation for that: 349€ – 150€ = 199€. She needs to pay for it herself and then send the receit.

Observation 18, household appliance, information – (Astianpesukone meni rikki)

Situation: Customer's dish washer had broke, and he had called already on Monday, but no one answered.

Information:

- It is Wednesday now.
- Someone had tried to call back once, but the customer did not answer.
- The customer is waiting for information on what is the maximum price for the repair.

Result: 328€ is the maximum price for the repair. The customer should call the repair service and ask about the price. The accident claim can be filed online.

Observation 19, window, information – (Ikkunalasi meni rikki)

Situation: Customer's window is broken, and the repair service would like to have a confirmation that the insurance company is paying for the repair.

Information:

- An accident claim was already made.

Result: The customer needs to pay for it herself first, and she can then send all the necessary attachments via the web service. She has to pay 100€ deductibles (omavastuu), but the rest is covered by her insurance.

Observation 20, phone, accident claim – (Matkapuhelin kastui)

Situation: Customer's phone accidentally dropped into a lake.

Information:

- The accident happened in Savonlinna, over 50 km from his home.

- The price of the phone was 200€ + 20€ for a case.
- He also had a virus protection software installed for 100€.

Result: Customer doesn't have travel insurance, and thus the damage is covered from his home insurance where there is a 150€ deductible (omavastuu). If he can't transfer the virus protection software into his new phone, he can send a message via the web service, and get compensation for that later.

Observation 21, phone, information – (Matkapuhelin rikkoutui)

Situation: The customer had filed an accident claim about a broken phone online and wanted to know about the situation, as he saw from the web service that the claim had been processed.

Information:

- An sms was sent to him, but for some reason he had not received it.
- He had put 250€ as an expected expense for repairing the phone to the accident claim.
- The sms should have said: "Ok, that's fine. Go and repair it."

Result: The customer can ask for the price for the repairment from a Samsung service. If it's close to the price of a new phone, then it shouldn't be repaired. Otherwise if it's 250€ or below, just send a message online about what will be repaired and how much it will be. If they only give a written estimate, send a copy to us, and we'll cover the charges. No need to send the receit, but keep it for six months.

Observation 22, lost animal, information, accident claim – (Eläin katosi tai varastettiin)

Situation: The customer had called already before about her lost chihuahua and someone had said that she needs a copy of the report of loss from the police.

Information:

- She had called the police and asked for the report of loss, but they had said that they have no resources to give out such copies.

Result: Accident claim via the phone. Call the police again and ask for an id for the case. As they have a system for these types of cases, they should have some kind of an id. You can then send it via the web service. There is a 30 day waiting period in lost animal cases, so we will contact you about other paperwork when it's closer to the 30 days.

Observation 23, phone, accident claim – (Matkapuhelin rikkoutui)

Situation: The customer was driving motocross last weekend with his girlfriend in Mikkeli. They fell down and they both broke their phones.

Information:

- They live in Mäntsälä.
- They have travel insurance, which covers luggage.
- The customer didn't know that there's no deductibles in travel insurance.

Result: Accident claim on the phone. The customer needs to fill in the girlfriends information in the web service. Can be attached as a message to the claim. He has a One Plus One – gets a compensation as money. Girlfriend has iPhone 5 – should take it to a service to get it repaired.

Interview 1, bicycle stolen, accident claim – (Polkupyörä varastettiin)

Situation: The customer had left his bike to Malmi railway station in the morning. He took the train to work, and when he came back in the afternoon, the bike and the lock was gone.

Information:

- Customer hadn't done a report of an offence to the police yet.

Result: The customer should file a report to the police and save the report for six months. Accident claim on the phone. The customer was paid the value of the bike minus deductibles.

Interview 2, home, information, accident claim – (Uusi artikkeli)

Situation: An older customer had dropped a jar lid in the toilet and couldn't get it out.

Information:

- He lives in Sipoo.

Result: Accident claim on the phone. Needs to order a plumber. The claim handler googled a plumber for the customer and gave him the contact info. The customer needs to deliver a copy of the bill. He didn't have the tools to scan the bill, so he can deliver it to the nearest office. He has home insurance, so there's 150€ worth of deductibles.

Interview 3, home, accident claim – (Uusi artikkeli)

Situation: The customer sat on the toilet a bit carelessly and the toilet broke.

Result: Accident claim on the phone. The customer needs to order a repairman and send a copy of the bill.

Interview 4, home, accident claim – (Uusi artikkeli)

Situation: During Christmas time the lights went out, as there was a short-circuit.

- The customer couldn't fix the problem himself.

Result: Accident claim on the phone. He needs to order a repairman and send a copy of the bill.

Interview 5, burglary, accident claim – (Varastoon murtauduttiin)

Situation: Someone had broken the lock to the customer's storage cellar and stolen items from there.

Result: The customer should send a list of all the stolen items with details, and file an accident claim.

Interview 6, jewelry (luggage), accident claim – (Koru katosi)

Situation: The customer had been to Tallinn and stored his ring in the safety deposit in the hotel room. He came back to Finland and noticed that he didn't have the ring with him.

Information:

- The ring was worth over 700€.

Result: Unfortunately travel insurance covers only up to 120€, as the ring was forgotten or lost without an act of theft.

Interview 7, animal, accident claim – (Eläin sairastui)

Situation: The customer's dog had been to the vet.

Result: Accident claim on the phone. The customer still needs to send a copy of the bill.

Interview 8, travel, information – (Lomamatka keskeytyi)

Situation: The customer has been to a rental cottage and got sick during the holiday. He came back home early, because he couldn't enjoy the rest of the holiday.

Information:

- He wants to get compensation for the rental cottage from the days he didn't use.

Result: He didn't get the compensation, as the sickness wasn't severe enough.

Interview 9, travel, information, accident claim – (Uusi artikkeli)

Situation: The customer is driving to the airport, going on a holiday trip. The car's tire breaks down and the customer takes a taxi to the airport to catch the plane.

Result: He can get compensation for the taxi trip.

Interview 10, travel, information

Situation: The customer was taken to the police department, over 50 km from his home. He needed to go to a hospital, close to the police department. After the hospital incident he needed to go back to the police station. Finally he took a taxi back home and wanted to check if the insurance pays for the taxi.

Result: No, the insurance doesn't cover this.